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同济医药研究院

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徐力教授中医肿瘤高级研修班

徐力教授中医肿瘤高级研修班参会医师合影留念

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徐力教授与各位肿瘤组医师针对病案进行探析

病例讨论会参与医师全体合照

徐力教授与新加坡同济医院肿瘤组特别门诊医师合影留念

徐力教授于开班仪式致辞

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新加坡同济医院中医师晋升之路

林韦翰、郑黄芳、陈泉铭、张国强

新加坡同济医院（以下简称“同济医院”）自1867年创立以来，始终秉持“不分种族、宗教、国籍，施医赠药”的宗旨，成为本地中医慈善服务的象征。然而，直至21世纪初，本地中医师群体仍面临“职称扁平化”的困境 —— 无论行医年资、经验深浅，皆统称为“中医师”。对于本地中医“无提升途径”、“无专业水平评估”、“无公信力认证”的“三无”状态，同济医院及其同属机构同济医药研究院（以下简称“研究院”）秉持158年以来一贯重视高质量中医服务的宗旨，随着时代变迁精进，逐渐打造出今时集临床、教育与科研于一体的中医师职称晋升体系。本文将阐述这过程所经历的不同阶段。

一、从满清至中国改革开放后 — 对高质量中医服务不曾熄灭的坚持

同济医院从创立至今从未松懈对高质量中医服务的坚持。早在清朝年间，同济医院在其董事会的支持下，常年从中国各地招聘优秀中医师前来本地。当时的同济医院入职考核非常严谨，受招聘的医师们必须在同济医院进行闭门考试，唯有名列前三甲的医师方能被选中入职，为本地老百姓提供诊疗服务。能在同济医院行医被视为当时的一种殊荣，而“从同济医院出来”更是行业里的金字招牌。

中国解放之后，因政治原因，同济医院未能继续邀请中国优秀医师前来驻诊。这项政策改革也影响了本地中医行业生态。因此，1953年1月，由新加坡中医师公会主办的“新加坡中医专门学校”（1975年改名为“新加坡中医学院”）应运而生，开始本地中医的系统培养。成立于1957年的新加坡中医药促进会，于1973年宣布成立中医学研究院，制定了四年制“中医全科学习班”，培养中医接班人。

为让本地中医在毕业后能有进一步提升的途径，同济医院于1982年举办首届3年全日制的同济医药研究学院高级中医专业文凭课程，面向拥有至少5年行医经验或新加坡中医学院毕业的医师。该班级延续了两届，为现今的本地中医行业培养出不少栋梁。

同济医药研究学院高级中医专业文凭首届毕业生名单，共27位毕业生（按姓氏笔画排列）：王亚雄、王志雄、尤奕福、卢锦燕、许丽芬、许海、陈巧凤、陈宝珠、陈秋顺、陈秋梅、陈期发、陈瑞烈、李耀晶、杨惠香、张国强、林文贤、林亚义、林光泰、林惠明、罗惠娟、侯锡光、赵英杰、黄英才、黄和兰、黄雪霞、曾仁春、曾浓盛。

第二届毕业生名单，共15位毕业生（按姓氏笔画排列）：卢金玉、何明凤、陈金荣、陈秋兰、陈家旭、苏雅虹、陈瞬娇、林金水、林淑英、林新和、胡添娣、符气鸣、萧道烈、黄东国、谭翠蝶。

从1986年起，同济医院筛选优秀医师到中国攻读中医硕士及博士学位，由房定亚教授引领到中国中医研究院（现中国中医科学院）进修，将最先进的中医知识与宝贵经验带回新加坡。从该计划毕业的中医师包括（按姓氏笔画排列）：博士学位：陈巧凤、卢金玉、夏誉溦、张国强；硕士学位：陈家旭。

二、同济医药研究院的成立 — 开拓本地中医药科研与教育

研究院成立于2003年，在同济医院庆祝135周年之际，成功为研究院筹募200万的科研基金，以开拓中医药科研和教育工作。研究院成立时的宗旨为：

1）开办中医继续教育，提升本国中医师的专业水准

研究院积极与中国各地中医药大学合作，开展中医师专业水准的提升课程，邀请国内外著名资深中医药专科医师及教授授课，课程深受本地医师们的欢迎。2007年初，研究院也承接新加坡南洋理工大学生物医学与中医学双学士学位课程的临床见习与实习任务。2012年至2018年期间，承担新加坡中医药促进会属下中医学研究院学生的临床教学和辅导工作。至今，研究院共承办多批次临床教学和辅导工作，在教学管理、计划安排、教学讲座、师资带教等方面，均获得了校方和同学们的好评。

专业中医的提升亦是研究院的要务之一。从2013年起，研究院与辽宁中医药大学合作开展中医硕士与博士课程，至今为本地培养了45名硕士生（37名已毕业，8名在读）及5名博士生。与辽宁中医药大学的合作决定取决于几个要素：i）对治学与毕业的严谨要求；ii）对硕博研究生培养的认真投入；iii）强力师资队伍与教学设施。

研究院与辽宁中医药大学经多年合作，于2021年成立了标志性的“中医药国际合作中心”，并从2022年连续3年获得了中国“国家中医药管理局中国-新加坡中医药中心”合作专项，获得了总额220万人民币的支持，以开展多项中医师技能提升与培训项目（辽宁中医药大

学国际交流合作处, 2024)。

中医继续教育（Continuing Professional Education, CPE）亦是研究院的另一项重要领域。响应政府对CPE的号召，研究院于2013年首创CPE远程视频授课方式，使本地医师不用出国、不用耽误本身的工作，就能得到著名教授的言传身授。此举不仅在新加坡开辟先河，且内容和规划日臻完善，成为多家中医团体争相效仿的对象。近5年里，随着世界对中医学愈发重视，研究院主办的线上CPE课程如雨后春笋般日益增多，单从2020年至2024年期间累计主办197场CPE课程，参与人次共计28,027人次。与研究院合作过的海外高等中医学府也从2014年的辽宁中医药大学，拓展至现今与重庆市中医院、上海中医药大学、黑龙江中医药大学、天津中医药大学、中国中医科学院、内蒙古医科大学、山东中医药大学、中国中医科学院西苑医院等多所机构。

随着新冠疫情结束，研究院也积极提供更多短期海外进修班，让更多本地中医师能到海外短期进修学习。2024年研究院第一次举办海外针灸培训班，并前后3次派遣共65名本地医师前往辽宁中医药大学进修。至今日，研究院一共举办了6场海外短期进修班，合作的高等学府包括辽宁中医药大学、中国中医科学院广安门医院、山东中医药大学等高等学府。

2) 开展中医药科研

研究院在同济医院医师的配合下，极力推广中医药科研。2004年，研究院自主研发的“补肾益精丸”经过多年的效验，终于在2015年走向市场，为生育困难的男女带来福音。2013年与辽宁中医药大学合作的科研课题《中新现代针刺疗法治疗膝骨关节炎的临床研究》也取得初步成果。在2014年，新加坡卫生部为了鼓励中医走向科研，设立中医药科研基金，至今已颁发了5次科研基金，同济医院非常有幸在4次的科研申请都荣获科研基金，至今已完成3项课题，并有2项课题进行中 (Ministry of Health, 2025)。面对2025年的第6次科研基金课题招募，研究院也踊跃地申请数项课题。

随着研究院迈入创立后的第23年，我们依然秉持“培育”、“创新”、“精益求精”的核心价值观，心系本地中医人才发展，致力为他们提供学习和成长的机会，将新构思转化为切实成果，以满足社会不断变化的需求，并提供优质服务，不断提高我们的工作质量。

三、职称晋升体系架构 — 引领本地中医职称建设

1) 职称晋升的早期

1987年，同济医院第一次开展了以中医药诊治专病的特别门诊，培训中医临床专病人才，造福广大新加坡病黎。当时的肾病组与肿瘤组组长张国强博士则意识到，中医师培养除了需要有规范化专业培训以外，也应该为中医师提供专业的职称晋升道路，提高本地中医师职业素质及社会认可。因此，张博士参考了新加坡、美国、澳大利亚、英国等多国的西医专科医师培训制度，提出了新加坡中医专科教育制度与职称体系雏形。在当时本地中医未得到足够认可的大环境下，这项计划未能取得国家的认可，而中医专病医师培养仅在各别机构中得到不同程度的实行。2009年，本地中医机构首次派遣中医师前往中国进行“主任医师”考核，获取由世界中医药联合学会（以下简称“世中联”）认可的主任医师资格。同济医院经考虑医师的临床经验、临床能力、中医学术水平及医德等多项考量后，先后派遣5位医师前往主任医师考核。获得主任医师资格的医师包括（按姓氏笔画排列）：卢锦燕、卢金玉、孙丽敏、张国强、钟绍丰。然而，本地中医行业依然缺乏独立的中医职称晋升体系，从“中医师”至“主任医师”之间的职称也鲜少有人申请，本地中医职称体系的成立依然飘渺无期。

2) 同济医院职称晋升架构的成形

2019年，随着同济医院已积累多年的中医专病医师（称为特别门诊医师）培养经验，张博士于同济医院的“TCM Roadmap”商讨中再次提出中医职称晋升路径的重要性。同年，在同济医院董事会的支持下，由郑黄芳主管与林韦翰博士携手撰写了第一版《同济医院医师专业技术职称评审准则》（以下简称“职称晋升准则”）。该准则以参考世中联颁布的《国际中医医师专业技术职称分级标准》为蓝本，融合本地中医行业情况，提出适用于本地的中医职称晋升两条途径：“专科医师途径”（特别门诊医师）及“非专科医师途径”。两条途径均将中医师职称分为四个不同阶段，分别为：

专科医师途径：

中医师（新入职）→ 主治医师（5年）→ 副主任医师（10年）→ 主任医师（>15年）

非专科医师途径：

中医师（新入职）→主治医师（5年）→资深主治医师（10年）→ 主任医师（>15年）

职称晋升准则的成立，首次在本地中医机构中提出了一条更全面性的职称评估标准。在职称晋升准则的提议下，中医师的职称认可不仅仅考量医师的行医年资，也会综合考虑医师的学历、专业知识与临床技能、科研与教学能力等，让中医职称的评估变得更全面性。同年，同济医院首次按照职称晋升准则建议，让21名本院医师首次获得职称晋升，打破本地中医行业“无提升途径”、“无专业水平评估”、“无公信力认证”的长久沉默状态。

随着职称晋升准则的成立，如何公平公正审核每一位医师资历，与时俱进地调整晋升要求成为了一个迫切的需要。“职称评审委员会”（以下简称“职评会”）在2020年因而诞生，由同济医院当时的三位主任医师（张国强博士、卢金玉博士、卢锦燕主任医师）作为首届职称晋升委员会成员，评估每一位符合资格的职称晋升申请，并提供如何优化职称晋升准则的意见。

从2020年创立至今，职评会已从原先的3位成员扩展至如今的6位成员（增加陈巧凤博士、谭翠蝶博士、郑黄芳博士），共评审了72人次医师晋升。

3) 新加坡卫生部中医师职业发展与薪酬指导原则

2021年，应新加坡卫生部邀请，同济医院的郑黄芳博士与林韦翰博士代表本院参加由各家中医机构组成的“中医师职业发展与薪酬指导原则工作小组”，探讨中医师的职业和薪酬，并共同制定中医临床执业的结构化职业发展和薪酬框架，以增加刚毕业的中医师对专业前景的信心。在探讨中，工作小组一同探讨了各大中医机构内部的职称晋升架构，其中，同济医院的“四阶段式”晋升架构及全面化评估亦是重点探讨的架构之一。

《中医师职业发展与薪酬指导原则建议》（Advisory on TCM Practitioners' Career and Remuneration Guidelines，以下简称CRG）在2023年由卫生部推出后，同济医院新成立的“医师培训发展部门”重要工作之一就是与职评会共同探讨如何根据CRG调整既有中医师职称晋升准则。历经数月协商，同济医院在2024年完成了更新版的职称晋升准则。新准则与旧准则的区别主要在于：

A) 从“四阶段式”改为“五阶段式”晋升（新增中医师1B阶段）

B) 更改为卫生部建议的统一化职称（旧职称 → 新职称）

i) 初级职称 ：中医师 → 中医师1A、中医师1B

ii) 中级职称 ：主治医师 → 高级中医师

iii) 中高级职称：副主任医师/资深主治医师→顾问中医师

iv) 高级职称 ：主任医师 → 高级顾问中医师

并在医师职称后注明其对应的门诊类别，如中医内科、针灸和其所属的特别门诊组别，以增强患者对医师专长领域的认识。

C) 评估项目更全面，评分标准更清晰及公正

i) 全面化评估项目（门诊量、专业水平评估、病例书写、病患满意度、结构化培训、教学与带教、学术论文、科研、行政、中医硕博学历、其他加分项目等）

ii) 多人评估，且各项目评估者不同，以提高评估公正性

iii) 评估结果由职评会审核，形成双重公信力保证，审核结果通过同济医院董事会决议后，将会公示于众

新版职称晋升准则实行后，同济医院在2025年晋升了27名医师，现各级医师人数如下：

职称		医师人数
Senior Consultant TCMP	高级顾问中医师	6
Visiting Consultant	特邀医师	2
Consultant TCMP	顾问中医师	15
Senior TCMP	高级中医师	13
TCMP 1B	中医师1B	11
TCMP 1A	中医师1A	12

四、未来展望

配合新加坡政府推动中医融入医疗体系的政策，同济医院与研究院将继续推动教育、科研、临床、科研产品开发（Education, Research, Clinical, Product, (ERCP)）的工作。目前（近2年内）考虑：

1）配合职称晋升规划，设立“全科中医师规范化培训”，以培养熟悉中医经典、循证医学及具有丰富临床经验的全科中医师。

2）建立研究院内部的“中医药科研咨询委员会”（TCM Research Advisory Committee），以指导并提升研究院科研项目管理与质量。

3）通过同济医院临床验方的经验积累，继续研究与开发新的中成药产品。每一个由研究院开发的中成药产品都需经过规范化的临床科研验证疗效与安全性。目前已开发产品：补肾益精丸；开发中产品：复乐宁、舒痹宁，并计划在未来开发多一例治疗肾病的中成药产品。

结语

随着时代的变迁，本地中医行业将持续进化，新的境况也预计会不断浮现。在时代洪流下，同济医院依然保持158年以来打造高质量中医服务的宗旨，期冀成为点亮本地中医晋升之路的一盏灯，并与广大新加坡病黎同舟共济，一齐迈向第二个一百年的中医善业。

【参考文献】

1. 辽宁中医药大学国际交流合作处. (2024, July 12). 学校连续三年中标国家中医药管理局中医药国际合作专项（中心类项目）。https://gjhzjlc.lnutcm.edu.cn/info/1032/3162.htm

2. Ministry of Health. (2025, February 3). Traditional Chinese Medicine Research Grant (TCMRG).https://www.moh.gov.sg/others/research-grants/tcm-research-grant

龙虎交战针法联合理筋拔伸法治疗膝骨性关节炎的临床研究（摘要）

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目的：

本研究基于前期数据挖掘得出的核心腧穴处方，与文献研究及临床经验总结出的“龙虎交战针法联合理筋拔伸”疗法组合运用，观察该疗法对膝骨性关节炎患者的疗效，客观评价本方案治疗的安全性及有效性，以期为膝骨性关节炎的临床诊治提供积极有效的方案，也为今后的科研提供循证医学依据与新思路。

材料与方法：

本研究纳入2019年3月至2024年5月在新加坡康德美中医中心诊治的100例膝骨关节炎患者，随机分为对照组与试验组各50例。对照组穴位根据前期数据挖掘结果选取的穴位行平补平泻针刺疗法；试验组在相同穴位基础上加用尺泽穴，并施以龙虎交战针法及20分钟理筋拔伸推拿。两组均每周治疗一次，持续10周。第1、5、10次治疗后评估VAS、Lysholm、WOMAC评分及主动屈伸角度，采用SPSS 22.0进行统计分析。

结果：

治疗前两组患者一般资料及各项指标无统计学差异（$P>0.05$），具有可比性。治疗后，两组VAS、WOMAC评分及屈伸角度均较治疗前改善，但组间差异无统计学意义（$P>0.05$）。试验组Lysholm评分显著优于对照组（$P<0.05$），Lysholm总有效率88%，高于对照组的72%。在行为功能方面，试验组步行、上下楼等6项改善显著优于对照组（$P<0.05$或$P<0.001$）。3个月随访无组间差异（$P>0.05$）。

结论：

基于文献重构的针刺处方，选用血海、梁丘、足三里、阴陵泉、阳陵泉、曲泉、三阴交、肾俞、次髎、秩边、委中、承山、阿是穴（膝、臀、踝）。试验组加上尺泽进行针刺治疗，采用龙虎交战法联合理筋拔伸推拿手法进行治疗，结果显示试验组比常规针刺治疗疗效更加显著，可有效改善患者膝关节疼痛、僵硬等症状，提高患者生活质量，可为临床治疗膝骨性关节炎提供治疗新方案，值得临床推广应用。

【关键词】龙虎交战针法；膝骨性关节炎；针刺；理筋拔伸法

一、临床资料与方法

1. 临床资料

1.1 病例来源

本研究病例源自2019年3月至2024年5月新加坡康德美中医中心与家访就诊的KOA患者100例，14例脱落。

1.2 诊断标准

1.2.1 西医分级标准

西医分级标准参照中华医学会骨科分会制定的Kellgren & Lawrence分级：

0级：正常膝关节，无骨赘。

Ⅰ级：关节间隙变窄，可能存在骨赘。

Ⅱ级：关节间隙可疑变窄，骨赘明显。

Ⅲ级：关节间隙明显狭窄，有硬化性改变，有中等量的骨赘

Ⅳ级：关节间隙明显狭窄，有严重的硬化性病变及明显有大量的骨赘。

1.2.2 参照中华医学会骨伤科学分会的《骨关节炎诊治指南（2018年版）》

膝关节骨关节炎的诊断标准：

1. 近1月内反复的膝关节疼痛

2.X线片（站立或负重位）示关节间隙变窄，软骨下骨硬化和（或）囊性变、关节边缘骨赘形成

3. 年龄≥50岁

4. 晨僵时间≤30min

5. 活动时有骨摩擦音（感）

（注：满足1及2~5条中的任意2条可诊断膝关节骨关节炎）

症状诊断符合以上骨科诊断，或下梯有疼痛、站立、行走久疼，下蹲困难等情况，X线提示膝关节间隙有狭窄，单或双膝，病程可在早、中、晚期。

1.2.3 中医辨证标准

根据中华中医药学会制定的标准《中医骨伤科临床诊疗指南》

气滞血瘀：关节疼痛如刺，休息后痛反甚。面色黧黑，舌质紫暗或有瘀斑，脉沉涩。

寒湿痹阻：关节疼痛重着，遇冷加剧，得温痛减，舌质淡，苔白腻，脉濡缓。

肝肾亏虚：关节隐隐作痛，腰膝酸软无力，酸困疼痛，遇劳更甚，舌质红，少苔，脉沉细无力。

气血虚弱：关节酸痛不适，少寐多梦，自汗盗汗，头晕目眩，心悸气短，面色少华，舌淡，苔薄白，脉细弱。

湿热痹阻：关节红肿热痛、屈伸不利，触之灼热，步履艰难，次为发热，口渴不欲饮，烦闷不安，

舌质红，苔黄腻，脉濡数或滑数。

参照《中医康复临床实践指南·膝骨关节炎》中对KOA的诊断标准：主症关节固定处刺痛伴夜间加重，次症关节屈伸不利伴麻木、僵硬，舌质暗紫、舌苔白且干、脉弦涩。

1.3 纳入标准

①符合上述中西医诊断标准者；②年龄在50-70岁之间（含50岁和70岁）；③影像学检查等级为I、II、III级；④VAS评分≥3分；⑤治疗前，未行关节镜手术、全膝关节置换等有创手术疗法；⑥精神、认知、心理状态正常，自愿参加本试验，并签署知情同意书。

1.4 排除标准

①由其他疾病引发的膝盖疼痛或继发的膝关节骨关节炎患者；②无法进行膝盖弯曲、步行、蹲下等运动训练的人群；③患有严重身体疾病，如传染性疾病和内脏功能不全的病人；④在过去的两周内，接受过药物治疗或相关疗法的病人；⑤病人曾经接受过关节镜手术或全膝关节置换等侵入性手术；⑥病人目前正进行其他治疗；⑦精神心理异常不能良好谨遵医嘱者。

1.5 剔除标准

①对针刺害怕及不配合者；②　研究中途退出者；③未遵循治疗计划患者；④因不良事件或反应不宜继续参与试验者。

1.6 研究方法

1.6.1 随机分组

采用SPSS 19.0的Random Number Generators获取随机数字表进行随机分组，将带有编号、随机数、组别和处理方法的卡片放入密封信封中，责任医师按照卡片上所标明的干预措施进行治疗。

1.6.2 治疗方案

1.6.2.1 对照组

取穴仰卧位处方：血海、梁丘、阴陵泉、阳陵泉、足三里、曲泉、膝阳关、三阴交。俯卧位：肾俞、次髎、秩边、委中、承山、阿是穴（膝、臀、踝）。

操作方法：患者取仰卧位微屈膝殿枕，医者使用75%酒精棉球进行手消毒及患者穴位皮肤消毒，消毒后使用0.20mm×40mm、0.20mm×25mm一次性使用无菌针灸针（北京汉医牌）针斜刺血海、梁丘（斜刺30°1-1.2寸），其余穴均直刺（约0.5-1.2寸）。诸穴得气后行平补平泻手法（频率60次/min），留针20min，每5min行针3遍；俯卧微屈膝殿枕位同样行针3遍/3回。即出针，不留针。每周治疗1次，连续治疗10周。

1.6.2.2 试验组

试验组采用与对照组相同的穴位处方进行针刺加尺泽（对应穴）。得气后行龙虎交战法，留针20min，每5min行针3遍。俯卧位微屈膝殿枕同样3遍/3回即出针。针刺结束后采取理筋拔伸法推拿按摩20min，1次/周，连续10周。

龙虎交战法具体操作：针刺前进行消毒，刺入穴位得气后，至人部（5分）区域。用拇指顺时针旋转90°9次，以达到九阳数，接着逆时针旋转90°6次，以完成六阴数；根据病情决定是先进行泻法还是补法，或者相反；持续进行这种交替的针刺手法。出针行补法。

理筋拔伸操作：首先进行理筋松解：①仰卧位，屈膝垫枕，反复拿捏股四头肌至小腿，并对血海、梁丘、阴陵泉、阳陵泉及阿是穴点按，再用肘按揉至微热；随后于髌骨两侧搓揉、刮间隙、扣委中各3遍。②俯卧位，对腰臀至腘窝、小腿腓肠肌进行浅层掌滚和深层肘按揉各3遍。③侧卧位双腿夹枕，用肘按揉髂胫束至腓肠肌，并点按委中各3遍。接着进行拔伸整复：仰卧位拉伸膝关节10秒，并做内外旋各3次，随后被动屈伸3次。踝关节拔伸包括足背肌群横擦与上下直擦各3遍，对跖趾关节牵拉5次，再对足背进行背屈、跖屈、内收、外展各3遍；俯卧位侧屈膝90°对小腿整复3遍。共20分钟/次，每周1次，连续10周。

1.7 观察指标

①视觉模拟评分（VAS，0－10分）评估疼痛；

②WOMAC量表（0－96分），涵盖疼痛、僵硬与功能活动三维度，分数越高功能越好；

③Lysholm评分（0－100分），包含10项功能指标，分值越高功能越佳；

④主动屈膝角度采用量角器在俯卧位测量，以腓骨小头为轴心，评估膝关节活动度。

1.8 疗效评价标准

参照《中药新药临床研究指导原则》及WOMAC评分制定：

- 康复：病征消退，关节活动自如，疗效指数超过90%；
- 显著改善：病征消失，关节活动自由，疗效指数介于70%至90%；
- 改善：病征基本消退，关节活动稍受限，疗效指数在30%至70%之间；
- 无效：病征及关节活动未见明显好转，疗效指数低于30%。

疗效指数计算方式为：（治疗前评分-治疗后评分）/治疗前评分×100%。

1.9 统计学方法

统计分析采用SPSS22.0统计分析软件。计量资料用（$\bar{x}\pm s$）表示。对两组数据进行正态性检验，若均符合，则组间比较用两独立样本t检验，组内前后比较用配对t检验；若有一组不符合或均不符合，则两组间比较用Mann-Whitney U检验，组内前后比较用Wilcoxon秩和检验。两组间构成比比较用X2检验。$P<0.05$为差异有统计学意义。

二、结果

2.1 一般资料对比

试验组男性患者13例，女性患者37例；年龄50～75岁，平均年龄 62.0±6.54 岁；病程0.3～20年，平均病程5.25±4.42 年。对照组男性患者12例，女性患者38例；年龄50～75岁，平均年龄 64.74±7.54 岁；病程0.25～20年，平均病程 5.76±3.89 年。两组患者基线资料差异无统计学意义，具有可比性。

2.1.1 性别分布比较

经卡方检验结果提示两组患者在性别方面差异无统计学意义（P＞0.05），具有可比性。在临床实际中，女性发病率大于男性（见表1）。

表1 两组患者性别对比（例）

组别	N	男性（例）	女性（例）	X2	P
试验组	50	13	37	0.00	1.00
对照组	50	12	38		

2.1.2 年龄分布比较

经独立样本t检验提示两组患者在年龄方面差异无统计学意义（P＞0.05），具有可比性（见表2）。

表2 两组患者年龄对比（岁）（$\bar{x}\pm s$）

组别	N	年龄（岁）	t	P
试验组	50	62.00±6.54	-1.94	0.06
对照组	50	64.74±7.54		

2.1.3 病程及证型分布比较

经独立样本t检验提示两组患者在病程方面差异无统计学意义（P＞0.05），具有可比性（见表3）。

表3 两组患者病程对比（年）($\bar{x}\pm s$)

组别	N	病程（年）	t	P
试验组	50	5.25±4.42	-0.60	0.55
对照组	50	5.76±3.89		

经独立样本t检验提示两组患者在证型上差异无统计学意义（P＞0.05），具有可比性（见表4）。

表4两组患者KOA中医辨证治疗对比（分）

时期	N	气滞血瘀	寒湿痹阻	肝肾亏虚	气血虚弱	湿热痹阻
试验组	50	2	12	30	6	0
对照组	50	0	10	31	8	1

2.2 观察指标

2.2.1 两组患者右膝治疗前后VAS评分比较

组内右膝VAS评分：试验组治疗1次与5次P=0.76、5次与10次P=0.45、1次与10次P=0.74；对照组1次与5次P=0.58，5次与10次P=0.42，1次与10次P=0.39。组内治疗后1次、5次与10次无差异（P＞0.05）。

组间比较：两组治疗1次经独立样本u检验P=0.32，两组具有可比性；治疗5次P=0.20，治疗10次P=0.91，差异均无统计学意义（P＞0.05）。说明试验组方案疗效不显著于对照组（见表5）。

表5两组患者右膝治疗1、5、10次VAS评分比较(分)($\bar{x}\pm s$)

时期	N	治疗1次	治疗5次	治疗10次
试验组	50	4.36±2.09	3.6±1.74	3.22±1.83
对照组	50	3.98±1.98	3.24±1.8	3.26±1.7
U		1394.0	1432.0	1233.0
P		0.32	0.20	0.91

2.2.2两组患者治疗前后左膝VAS评分比较

组内左膝VAS评分：试验组治疗1次与5次P=0.59、5次与10次P=0.78、1次与10次P=0.37；对照组1次与5次P=0.27、5次与10次P=0.26、1次与10次P=0.40。组内治疗后1次、5次与10次无差异具无统计学意义（P＞0.05）。

组间比较：两组治疗1次经独立样本u检验P=0.71，两组具有可比性；治疗5次 P=0.24，治疗10次 P=0.13，无差异无统计学意义（P＞0.05）。说明试验组方案疗效无显著于对照组（见表6）。

表6 两组患者左膝治疗1、5、10次VAS评分比较(分)($\bar{x}\pm s$)

时期	N	治疗1次	治疗5次	治疗10次
试验组	50	4.14±1.99	3.4±1.78	2.64±1.61
对照组	50	4.04±2.21	3.1±2.01	3.12±1.71
U		1303.0	1417.5	1032.5
P		0.71	0.24	0.13

2.2.3 两组患者治疗1、5、10次 WOMAC评分比较

组内WOMAC评分：试验组治疗1次与5次P=0.77、5次与10次P=0.94、1次与10次P=0.67；对照组1次与5次P=0.96,5次与10次P=0.89；1次与10次P=0.71。治疗后两组在1次、5次与10次无差异无统计学意义（P＞0.05）。

组间比较：两组治疗1次经独立样本u检验P=0.99，两组具有可比性；治疗5次P=0.65，治疗10次P=0.07，无差异说明治疗后试验组疗效无显著于对照组虽然有进步。无统计学意义（P＞0.05）。（见表7）

表7 两组患者治疗1、5、10次 WOMAC评分比较(分)($\bar{x}\pm s$)

时期	N	治疗1次	治疗5次	治疗10次
试验组	50	70.71±16.37	78.41±11.21	81.76±10.35
对照组	50	71.41±13.20	76.88±12.90	77.88±10.83
U		1247.0	1315.5	1512.5
P		0.99	0.65	0.07

2.2.4 两组患者治疗前后Lysholm评分量表比较

组内Lysholm评分：试验组治疗1次与5次P=0.95、5次与10次P=0.75、1次与10次P=0.68；对照组1次与5次P=0.99、5次与10次P=0.88，1次与10次P=0.89。治疗后组内在1次、5次与10次无差异具无统计学意义（P＞0.05）。

组间比较：两组治疗1次经独立样本u检验 P=0.57，两组具有可比性；治疗5次 P=0.16，治疗10次 P=0.02 差异有统计学意义（P＜0.05）。说明试验组方案疗效有显著于对照组。（见表8）

表8 两组患者治疗1、5、10次 Lysholm评分比较(分)($\bar{x}\pm s$)

时期	N	治疗1次	治疗5次	治疗10次
试验组	50	69.04±15.91	75.01±13.93	79.26±12.76
对照组	50	67.02±15.23	71.82±13.22	73.2±13.53
U		1333.5	1455.5	1580.0
P		0.57	0.16	0.02▼

注：组内比较无差异P＞0.05，组间比较有差异▼P＜0.05

2.2.5 两组患者治疗1、5、10次主动屈膝角度比较

2.2.5.1 组内主动屈右膝评分

试验组治疗1次与5次P=0.55、5次与10次P=0.24、1次与10次， P=0.38；对照组1次与5次P=0.30， 5次与10次P=0.63、1次与10次P=0.89。治疗后组内在第1次与5次、5次与10次、1次与10次无差异具无统计学意义（P＞0.05）。

组间比较：两组治疗1次经独立样本u检验P=0.76 ，两组具有可比性；治疗5次 P=0.51，治疗10次 P=0.46 ，无差异具无统计学意义（P＞0.05）。说明试验组方案疗效无显著于对照组。（见表9）

表9两组患者治疗1、5、10次右膝主动屈膝角度比较(分)($\bar{x}\pm s$)

时期	N	治疗1次	治疗5次	治疗10次
试验组	50	118.5±13.37	121.44±11.42	122.54±10.64
对照组	50	119±15.67	120.44±9.79	122.02±9.09
U		1208.0	1345.5	1357.0
P		0.76	0.51	0.46

2.2.5.2 组内主动屈左膝评分

试验组治疗1次与5次P=0.70、5次与10次P=0.30、1次与10次P=0.53；对照组1次与5次P=0.46、 5次与10次P=0.81、1次与10次P=0.67。治疗后组内在1次、5次与10次没有差异，无统计学意义（P＞0.05）。

组间比较：两组治疗1次经独立样本u检验P=0.54，两组具有可比性；治疗5次P=0.79，治疗10次P=0.052，无差异统计学意义（P＞0.05）。说明试验组方案左膝主动角疗效无显著于对照组，但有待进步。（见表10）

表10 两组患者治疗1、5、10次左膝主动屈膝角度比较(分)($\bar{x}\pm s$)

时期	N	治疗1次	治疗5次	治疗10次
试验组	50	120.38±10.25	121.70±10.21	124.50±8.58
对照组	50	121.18±10.9	121.22±10.36	121.26±9.36
U		1160.0	1290.0	1531.0
P		0.54	0.79	0.052

2.3 两组患者临床疗效比较

2.3.1 WOMAC临床疗效对比

经秩和检验，Z=-1.01，P=0.31，说明两组患者临床总有效率差异无统计学意义(P＞0.05)，提示试验组和对照组疗效比较不显著。（见表11）

表11 两组患者WOMAC临床疗效对比（例，%）

组别	N	显效	有效	无效	总有效（%）
试验组	50	27	22	1	（49）98
对照组	50	21	29	0	（50）100

2.3.2 Lysholm临床疗效对比

经秩和检验，Z=2.30， P=0.02，说明两组患者临床总有效率差异具有统计学意义▼ (P＜0.05)，提示试验组疗效优于对照组。（见表12）

表12两组患者Lysholm临床疗效对比（例，%）

组别	N	显效	有效	无效	总有效率(%)
试验组	50	8	36	6	(44)88
对照组	50	2	34	14	(36)72▼

2.3.3 WOMAC晨僵评分

组内WOMAC晨僵评分：试验组治疗1次与5次P=0.27、5次与10次P=0.53、1次与10次P=0.09为对照组1次与5次P=0.68，5次与10次P=0.24，1次与10次P=0.13。治疗后试验组和对照组在治疗1次、5次与10次无差异具无统计学意义（P＞0.05）。

组间比较：两组治疗1次经独立样本u检验P=0.31，两组具有可比性；治疗5次P=0.02，治疗10次 P=0.042，差异有统计学意义（P＜0.05）。说明试验组WOMAC晨僵方案疗效显著于对照组。（见表13）

表13 两组患者治疗前1、5、10次WOMAC晨僵比较(分)($\bar{x}\pm s$)

时期	N	治疗1次	治疗5次	治疗10次
试验组	50	1.16±0.96	0.96±0.78	0.84±0.65
对照组	50	1.34±0.8	1.28±0.73	1.1±0.68
U		1110.5	946.0	992.5
P		0.31	0.02▼	0.042▼

注：组内比较P＞0.05， 组间比较▼ P＜0.05

2.3.4 WOMAC下楼评分

组内WOMAC下楼评分：试验组治疗1次与5次P=0.038、5次与10次P=0.015、1次与10次P＜0.001；对照组1次与5次P=0.043，5次与10次P=0.63，1次与10次P=0.017。治疗后试验组有差异在有1次、5次（P＜0.05）、10次（P＜0.001），而对照组在1次与5次，1次与10次有差异（P＜0.05），只有5次与10次无（P＞0.05），差异说明治疗后WOMAC下楼有差异试验组（P＜0.001）、对照组（P＜0.05）。

组间比较：两组治疗1次经独立样本u检验 P=0.51，两组具有可比性；治疗5次 P=0.35，差异无统计学意义（P＞0.05），治疗10次P=0.002 （P＜0.01）差异具有统计学意义。说明试验组WOMAC下楼方案疗效有显著于对照组。（见表14）

表14两组患者治疗前1、5、10次WOMAC下楼比较(分) ($\bar{x}\pm s$)

时期	N	治疗1次	治疗5次	治疗10次
试验组	50	1.64±0.98	1.24±0.77*	0.86±0.7* ***
对照组	50	1.74±0.9	1.42±0.91*	1.36±0.83 *
U		1158.5	1123.0	861.5
P		0.51	0.35	0.002▼▼

注：组内比较***P＜0.001，*P＜0.05；组间比较▼▼P＜0.01

2.3.5 WOMAC上楼评分

组内WOMAC上楼评分：试验组治疗1次与5次P=0.11、5次与10次P=0.17、1次与10次P=0.005；对照组1次与5次P=0.07，5次与10次P=0.83，1次与10次P=0.06。治疗后试验组在1次与10次有差异（P＜0.01），而1次与5次、5次与10次无差异，而对照组在1次、5次、10次均无差异（P＞0.05），说明试验组治疗后WOMAC上楼有统计学意义。

组间比较：两组治疗1次经独立样本u检验P=0.84，两组具有可比性；治疗5次P=0.69，治疗10次 P=0.12，说明WOMAC上楼试验组方案疗效无显著于对照组（P＞0.05）。（见表15）

表15两组患者治疗1、5、10次WOMAC下楼比较(分) ($\bar{x}\pm s$)

时期	N	治疗1次	治疗5次	治疗10次
试验组	50	1.58±1.09	1.20±0.83	0.96±0.73 **
对照组	50	1.56±0.86	1.26±0.8	1.24±0.85
U		1222.0	1195.5	1014.0
P		0.84	0.69	0.12

注：组内比较 **P＜0.01

2.3.6 WOMAC起立评分

组内WOMAC起立评分：试验组治疗1次与5次P=0.047、5次与10次P=0.11、1次与10次P=0.001；对照组1次与5次P=0.03，5次与10次P=1.0，1次与10次P=0.047。治疗后试验组在5次、1次及10次有差异（P＜0.05），同样对照组在5次、1次、10次差异具有统计学意义（P＜0.05），说明试验组治疗后WOMAC起立两组均有统计学差异。

组间比较：两组治疗1次经独立样本u检验P=0.78，两组具有可比性；治疗5次P=0.83，治疗10次 P=0.27，说明WOMAC起立试验组方案无显效于对照组（P＞0.05）。（见表16）

表16两组患者治疗1、5、10次WOMAC起立比较(分) ($\bar{x}\pm s$)

时期	N	治疗1次	治疗5次	治疗10次
试验组	50	1.18±0.8	0.92±0.7*	0.76±0.69**
对照组	50	1.14±0.78	0.9±0.68*	0.9±0.65*
U		1288.0	1279.0	1105.5
P		0.78	0.83	0.27

注：组内比较 **P＜0.01,*P＜0.05

2.3.7 WOMAC站立评分

组内WOMAC站立评分：试验组治疗1次与5次P=0.11、5次与10次P=0.25、1次与10次P=0.008；对照组1次与5次P=0.11，5次与10次P=0.91，1次与10次P=0.13。治疗后试验组在1次与5次、在5次与10次无差异（P＞0.05），但1次与10次有差异（P＜0.01）、而对照组在前、中、后均无差异（P＞0.05）。

组间比较：两组治疗1次经独立样本u检验P=0.96，两组具有可比性；治疗5次P=0.29，治疗10次 P=0.72，均无统计学差异（P＞0.05），说明WOMAC站立试验组方案疗效不显著于对照组。（见表17）

表17两组患者治疗1、5、10次WOMAC站立比较(分) ($\bar{x}\pm s$)

时期	N	治疗1次	治疗5次	治疗10次
试验组	50	1.06±0.93	0.64±0.72	0.64±0.69 **
对照组	50	1.02±0.8	0.8±0.78	0.7±0.74
U		1257.5	1110.0	1202.0
P		0.96	0.29	0.72

注：组内比较 **P＜0.01

2.3.8 WOMAC步行评分

组内WOMAC步行评分：试验组治疗1次与5次P=0.046、5次与10次P=0.85、1次与10次P=0.030；对照组1次与5次P=0.02，5次与10次P=0.37，1次与10次P=0.12。治疗后试验组在1次与5次、1次于10次有差异（P＜0.05），而5次与10次无差异无统计意义（P＞0.05）；同样对照组在5次与10次、1次与10次无差异（P＞0.05），但在1次与5次有差异（P＜0.05），说明试验组治疗后WOMAC步行两组有统计学意义。

组间比较：两组治疗1次经独立样本u检验 P=0.17，两组具有可比性；治疗5次 P=0.33，治疗10次 P=0.04，（P＜0.05），说明WOMAC步行试验组方案疗效有显著于对照组，具有统计学意义。（见表18）

表18 两组患者治疗1、5、10次WOMAC步行比较(分) ($\bar{x}\pm s$)

时期	N	治疗1次	治疗5次	治疗10次
试验组	50	0.74±0.78	0.44±0.61*	0.42±0.61 *
对照组	50	0.92±0.72	0.6±0.76*	0.7±0.71
U		1066.5	1126.0	979.0
P		0.17	0.33	0.04▼

注：组内比较*P＜0.05 ； 组间比较▼P＜0.05

2.3.9 WOMAC上下车评分

组内WOMAC上下车评分：试验组治疗1次与5次P=0.36、5次与10次P=0.16、1次与10次P=0.03；对照组1次与5次P=0.20，5次与10次P=0.47，1次与10次P=0.42。治疗后试验组在1次与5次、5次与10次无差异（P＞0.05）、但在1次与10次有差异（P＜0.05）；而对照组治疗1次、5次、10次都无差异（P＞0.05），说明试验组治疗后WOMAC上下车有差异，具有统计学意义（P＜0.05）。

组间比较：两组治疗1次经独立样本u检验 P=0.83，治疗5次P=0.46，治疗10次P=0.15，两组具有可比性，说明WOMAC上下车试验组方案疗效无显著于对照组，无统计学意义（P＞0.05）。（见表19）

表19上下车两组患者治疗1、5、10次WOMAC上下车比较(分) ($\bar{x}\pm s$)

时期	N	治疗1次	治疗5次	治疗10次
试验组	50	1.18±0.92	1.02±0.82	0.78±0.74*
对照组	50	1.16±0.96	0.92±0.88	0.98±0.68
U		1279.5	1351.5	1061.0
P		0.83	0.46	0.15

注：组内比较* P＜0.05

2.3.10 Lysholm 蹲着评分

组内Lysholm蹲着评分：试验组治疗1次与5次P=0.33、5次与10次P=0.72、1次与10次P=0.18；对照组1次与5次P=0.06、5次与10次P=0.57，1次与10次P=0.23。治疗后试验组在1次、5次与10次都无差异（P＞0.05），而对照组同样没有差异（P＞0.05），说明试验组与对照组治疗后Lysholm蹲着无差异，无统计学意义。

组间比较：两组治疗1次经独立样本u检验 P=0.28，治疗5次、P=0.0002，治疗10次 P=0.0004，说明Lysholm蹲着试验组方案疗效有显著于对照组，有统计学意义（P＜0.001）。（见表20）

表20两组患者治疗1、5、10次Lysholm蹲着比较(分) ($\bar{x}\pm s$)

时期	N	治疗1次	治疗5次	治疗10次
试验组	50	1.32±1.02	1.10±0.86	1.02±0.77
对照组	50	1.44±0.64	1.68±0.65	1.56±0.76
U		1103.5	751.5	772.0
P		0.28	0.0002▼▼▼	0.0004▼▼▼

注：组间比较 ▼▼▼P＜0.001

2.3.11 3月随访评分

经独立样本t检验，P＞0.05，提示两组患者在3月随访评分差异无统计学意义。（见表21）

表21 两组患者3月随访评分对比 (分) ($\bar{x}\pm s$)

组别	N	评分	t	P
试验组	50	2.8±0.7	-1.14	0.26
对照组	50	3.0±0.67		

三、讨论

3.1 穴位选择依据

本研究依据数据挖掘分析结果，选取了出现频次较高的七个穴位：犊鼻、内膝眼、阳陵泉、血海、梁丘、足三里、阴陵泉。这些穴位均位于膝关节附近，近端取穴可直达病所，改善局部症状疗效确切，犊鼻和内膝眼位于膝前凹陷，属“膝之门户”，针刺可直接疏通关节局部气血，缓解屈伸受限。阳陵泉为胆经合穴、筋会穴，可通利胆气、柔筋缓急，临床适用于骨关节炎等运动系统病症，其针刺亦可能通过刺激腓总神经分支来调节膝周肌张力。血海活血化瘀，针对气滞血瘀型膝痛效果显著；梁丘为胃经郄穴，有助于调节胃经气血，滋养膝周筋肉；足三里作为胃经合穴，能补中益气、扶正祛邪，适合虚性痹证。阴陵泉则有健脾利湿、化解膝部湿浊的功能，与阳陵泉配合使用可协同通络止痛、调节气化。此七穴配伍，以“通络止痛、健脾利湿、养血柔筋、扶正固本”为纲，既针对膝部局部病理，又调节整体脏腑功能，充分体现中医“标本兼治”、“筋骨并重”的诊疗智慧。临床可依证型加减，如寒盛加灸、热痹刺络，实现精准施治。

3.2龙虎交战法选择依据

龙虎交战针法结合捻转补泻法和九六补泻组合，通过左右反复交替捻转针体，以增强针感并达到镇痛效果。这种方法有阳中隐阴、阴中隐阳的特点，调节体内阳气，改善疼痛和僵硬症状，广泛应用于治疗各种疼痛和寒热虚实夹杂的病症。

《针灸大成》、《针灸大全》均有提到：“龙虎交战手法，三部俱一补一泻。左捻九而右捻六，是亦住痛之针”，说明该手法具有疏通经络、止痛移疼的效果。高武的《针灸聚英》提出龙虎交战针法在临床运用中，捻转向前9次为阳，捻转向后6次为阴，可以补气血、泻外邪，调节体内阳气，从而缓解寒邪导致的收缩疼痛和僵硬。汪机在《针灸问对》中详细说明了此手法：“下针之时，先行龙而左转，可施九阳数足；后行虎而右转，又施六阴数足。”首先将针刺入俞穴天部（浅层），施青龙摆尾盘右转，按而添之，三提九按，九阳数足；后于地部（深层）行白虎摇头，右盘左转，提而抽之，三按六提，六阴数足，得气后出针。此方法适用于半实半虚症，具有阳中有阴，阴中有阳的特点。

膝骨性关节炎发病集中于中老年人，特征正气亏虚，外协易侵入人体，属本虚标实，龙虎交战针法是攻补兼施的手法，通过正邪交争先补益正气，后祛除邪气，与KOA病机相符合。龙虎交战针法通过捻转使针体和肌肉摩擦产生针感电流，控制气行方向，从而祛邪正行，达到止痛效果。陆瘦燕认为龙虎交战通过一左一右、一正一反反复捻针，对气血运行产生推拉的双向影响，疏通经络的气血，达到“住痛移疼”的效果，这种特殊的补泻手法也同样适用于治疗KOA。

3.3 理筋拔伸法选择依据

筋骨相连，骨疾病会影响筋，理筋拔伸法强调“筋骨并重，筋骨同治”理论，通过调治膝关节周围的经筋和骨关节，强筋使经筋强壮柔顺，防止骨关节错位。《医宗金鉴》认为要用两手安置受伤的筋骨使其复原。通过按摩的方法，按其筋络，通闭气，摩其淤滞，散瘀结肿。薛明新教授运用芒针结合理筋拔伸法治疗骶髂关节紊乱综合征，他认为“筋骨相因，首责之筋”，疗效显著且安全性高。

理筋拔伸法通过手法松解肌肉、筋膜及膝关节周围软组织的粘连，扩大关节间隙和滑利关节，降低肌肉张力，减少关节异常应力，从而延缓软骨退变，此外还能使经筋强壮柔顺，以约束骨骼，强利关节，防止骨关节错位。部分患者因长期疼痛导致步态异常，加剧软骨磨损，这时则需要通过拔伸结合旋转手法，通过牵引整骨纠正骨关节的间隙及相对位置的细微改变，纠正轻微关节错位，改善下肢力线，延缓结构性损伤。该方法的特点是在强壮松弛的经筋同时配合拔伸松动法调整胫股关节及髌股关节对位，具有病证合参，动静结合的特点，发挥温经散寒、疏经通络、松解粘连等功效，可放松局部肌肉、韧带，缓解其痉挛状态，促进肌肉肌腱恢复和肌肉组织平衡，增加关节活动度。最后搭配按揉膝关节周围阿是穴，可以有效改善血液循环与炎症，减轻滑膜水肿和关节腔积液。也能够缓解针刺后膝关节周围酸麻胀痛等不适感，提高患者依从性。

3.4 龙虎交战针法联合理筋拔伸法治疗KOA作用机制

目前针灸治疗KOA的作用机制尚不明晰，现认为主要通过多维度生理调节机制实现。在神经调控层面，龙虎交战针法通过高强度刺激膝关节周围穴位，激活Aδ与C类神经纤维，动态调节自主神经功能，恢复交感与副交感神经的动态平衡，从而改善滑膜微血管舒缩功能障碍，增加软骨下骨及滑膜组织的氧供与代谢底物运输。在体液调节方面，龙虎交战针法可抑制促炎因子释放并调节免疫应答，同时促进内源性镇痛物质（如脑啡肽、内啡肽）的合成与分泌，有效缓解慢性疼痛症状，而理筋拔伸法的关节轴向牵引可降低关节腔内压力，加速炎性渗出物代谢，增强针刺的抗炎调节效应。从生物力学角度，理筋拔伸法通过屈伸位交替拔伸结合髌骨周围理筋手法，降低股四头肌-腘绳肌协同收缩时的异常应力；同时龙虎交战法通过调节膝关节经络气血，使局部神经传导通路兴奋性提高。这促使肌肉顺应性增强，使推拿的力学调整更高效，恢复关节周围肌肉的协同收缩功能，最终重建关节力学平衡状态。

二者协同形成“神经递质调控-炎性微环境重塑-生物力学稳态重建”的三维治疗网络，体现中医“筋骨并治、动静结合”的整合调节优势。

3.5 疗效结果分析

经治疗，试验组WOMAC总有效率98%，无显著优于对照组的100%，组内无差异无统计学意义（$P>0.05$）但在Lysholm试验组总有效88%、对照组总有效为72%。差异有统计学意义（$P<0.05$）说明试验组方案治疗KOA疗效优于对照组。试验组在Lysholm中88%，是可能试验组在治疗后机械功能性改善；对照组在WOMAC 100% 中有效而在Lysholm 是72%可能对照组在治疗后对疼痛缓解效果显著，但未能改善深层功能问题的稳定性导致WOMAC高而Lysholm评分低。

因此高分差异可能源于评估维度不同，而非疗效优劣，需结合患者基线特征、治疗目标比如止痛相对功能恢复综合判断，因此WOMAC与Lysholm评分的差异确实评分标准、评估维度和治疗侧重点密切相关。WOMAC在疼痛接近消失时可能近满分，进一步改善无法体现；而Lysholm对高阶功能（如运动能力）要求使得高分为更难达到。

结论

1. 针刺治疗KOA疗效显著，形式多样（如针刀、火针、温针等），经济、副作用少的优势在针刺联合其他疗法可提升整体疗效，显示多科学整合的进步性。

2. 本病属虚实夹杂因从“开、枢、阖”理论使气机的发散、协调“腰-髋-膝-踝”平衡与转化；以及气血固摄内治疗KOA的高频穴位以局部取穴为主，其次阿是穴。

3. 采用传统针法在捻转90°、三数生成的哲学数意义（如天数3、老阴6、老阳9）希望有可量化生物节律以对龙虎交战针法与理筋拔伸推拿手法相结合，与常规针法相比，解释如何改善患者膝关节活动功能。

4. 脏腑穿凿论在膀胱经相通肺经，为另一思路对经络所采用在尺泽穴对应膝达到疏经活络、通调水道作用。

5. 中西医结合的浅层化，西医采用“组织工程、针对性代谢机制、基因治疗”在探讨中于中医技术的融合路径需病机-靶点-技术的对于模型。通过传统理论与现代系统生物学、量子生物力学、神经工程学交叉构建可计算、可验证、可预测的中医创新术语体系，推动学术话语的国际化转型。

【参考文献】略

基于meta分析对糖尿病周围神经病变的治疗评价

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目的：

本研究的目的是基于数据挖掘，通过循证医学的方法评价针刺疗法治疗糖尿病周围神经病变（DPN）的临床疗效和安全性。

材料与方法：

通过人工及计算机检索针刺治疗 DPN 的随机对照试验，其中时限为近20年（2002年至2023年），语言为中英文文献。检索后将文献列入 Microsoft Excel 中，运用计算机与手动排除不符合纳入标准的文献，再导入 Revman 进行 Meta 分析。

结果：

1. 有效率分析：治疗组的治愈率及显效率明显优于对照组（OR=2.31，95% CI (2.08, 2.58)，P<0.05）。
2. 运动神经传导速度（MNCV）分析：总体而言，治疗组的MNCV改善程度均优于对照组；其中，腓总神经（MD=4.25，95% CI (3.85, 4.65)，P≤0.05）的改善程度大于正中神经（MD=3.53，95% CI (3.11, 3.96)，P≤0.05）。
3. 感觉神经传导速度（SNCV）分析：总体而言，治疗组的SNCV改善程度优于对照组，其中，正中神经（MD=4.24，95% CI (3.85, 4.63)，P≤0.05）的改善程度大于腓总神经（MD=3.77，95% CI (3.44, 4.10)，P≤0.05）。
4. 多伦多临床评分系统（TCSS）评分分析：治疗组治疗后的TCSS评分优于对照组（MD=-1.56，95% CI (-1.87, -1.26)，P≤0.05）。
5. 不良事件分析：共11篇文献记载了不良反应，其中9篇（81.8%）未出现不良事件，2篇文献（18.2%）中出现了不良事件，并均属轻微事件，并未影响治疗结果。

结论：

Meta分析显示，针灸能明显改善临床总有效率、运动和感觉神经传导速度、多伦多临床评分系统（TCSS）评分等（P<0.05），因此视为有效的。针刺可通过修复血管损伤、改善血液循环等机制，起到减缓及改善DPN的症状体征。文献中不良事件的发生率低，也未出现严重不良反应，因此视为安全的。

【关键词】针刺；糖尿病周围神经病变；消渴病痹症；Meta分析；组方规律

1 材料与方法

1.1 文献搜索

使用中国知网CNKI及PubMed数据库，检索2002年至2023年，国内外有关针刺疗法治疗消渴病痹症或糖尿病周围神经病变（Diabetic Peripheral Neuropathy, DPN）的随机对照试验（Randomized Controlled Trials, RCT）文献。中文检索词以“消渴病痹症、消渴病痹病、糖尿病周围神经病变、消渴病痹痿、消渴痿症”，“随机对照、临床对照、随机”，以及“中医、针刺、电针、温针、针刺疗法”等为主题词和关键词组合进行检索。英文检索词以“Diabetic peripheral neuropathy、DPN、diabetes、neuropathy”，“randomized controlled trial、controlled clinical trial、randomized”，以及“traditional Chinese medicine、acupuncture、electro acupuncture、warm needle、acupressure”等为主题词和关键词组合进行检索。

1.2 文献纳入和排除标准

1.2.1 纳入标准

（1）研究类型

使用针刺治疗消渴病痹症或DPN的RCT文献；明确提出随机法，需有相应的对照组；发表于2002年至2023年的文献；语言限定选用中、英文。

（2）干预措施

对照组与治疗组均以口服降糖药或注射胰岛素，及饮食生活方式的干预控制血糖；治疗组配合针刺治疗（包括毫针刺法、电针、温针灸），留针时间、针刺腧穴和疗程不限；对照组无针刺治疗。

1.2.2 排除标准

（1）研究类型

综述、摘要、会议记录、动物实验、药代动力学等非临床对照试验研究以及重复检出的文献；研究病历少于6例；治疗时间少于一周；疗效、不良反应数据较少，不能满足meta分析要求；疗效评定指标不规范或未详细公布治疗结果。

（2）干预措施

以其他外治辅助方法为主，如艾灸、穴位注射、熏洗、推拿等外治法为干预措施；对照组或治疗组采用特殊针法，如灵龟八法等，或特殊辅助疗法，如八段锦疗法等；未明确指出针刺腧穴。

1.2.3 结局指标

（1）有效率；

（2）运动神经传导速度（Motor Nerve Conduction Velocity, MNCV）；

（3）感觉神经传导速度（Sensory Nerve Conduction Velocity, SNCV）；

（4）多伦多临床评分系统（Toronto Clinical Scoring System, TCSS）评分；

（5）不良事件。

1.3 方法学治疗评价

1.3.1 文献筛选

首先，由本作者从检索收集的文献中，通过阅读文献的题目与摘要，查找合格的文献原文，排除明显不符合纳入标准的文献。其次，对可能符合纳入标准的试验进行全文阅读以确定是否真正符合纳入标准，同时进一步排除肯定不合格的文献，并注明原因，编号登记。最后，对提供信息不全面或有疑问的原文，通过邮件方式与原作者联系，以获取相关信息。若有不同语言的重复发表文献则纳入中文文献。

1.3.2 资料提取

由作者独立对纳入文献的信息进行提取，并使用Excel软件建立数据库。

资料提取项目主要有：1)一般信息：文献题目、作者姓名、发表时间，作者单位及等级、国家、发表语言；2)研究方法：随机方法、隐藏分组、盲法实施情况、病例失访和退出情况；3)研究对象：诊断标准、基线情况、治疗组与对照组病例数；4)干预措施：针刺疗法、治疗频次、疗程、对照组治疗方法；5)结局指标：包括结局指标、各组在观察终点时的各项数据、发生副反应的人数以及类型。

1.3.3 研究的方法学评价

将纳入文献按照Cochrane评价手册5.0.1提供的“偏倚风险评估”由作者独立进行方法学质量评价[1]，包括6方面：随机序列生成和分配隐藏、对病人及试验人员实施盲法、对结局评估者实施盲法、结果数据不完整、选择性报告、和其他偏倚。对于每一个条目，如果满足（yes）则意味着低度偏倚风险；不满足（no）则意味着高度偏倚风险；当文献中未报告足够的信息让我们对相应条目作出明确的yes或no的判断时，则将该条目判定为不确定（unclear），意味着中度偏倚风险。

1.4 统计分析方法

采用Cochrane协作网提供的RevMan 5.3软件进行数据处理。计量资料采用加权均数差（Weighted Mean Difference, WMD）或标准化均数差（Standard Mean Difference, SMD）；计数资料用危险比率（Risk Ratio, RR）或比值比（Odds Ratio, OR），效应值及其95%的可信区间（Confidence Intervals, CI）表示。各临床试验结果的异质性检验采用卡方检验，当异质性检验（I2>50%, p<0.01）用随机效应模型（Random Effects Model）表达效应，反之用固定效应模型（Fixed Effects Model）表达。最后，对纳入的文献进行倒漏斗图分析，分析文献是否存在发表性偏倚。

2 结果

2.1 检索结果

最初的文献检索共获得688篇相关文献。经阅读题目与摘要后，排除278篇文献，其中排除原因包括：论文99篇，会议记录32篇，综述31篇，动物实验31篇，非糖尿病周围神经病变80篇，非随机对照实验2篇，研究设计方案3篇，共剩410篇。

统计整理后，以计算机及人工方式排除重复文献，共排除49篇重复文献。简单阅读文献中的“治疗方法”后，排除：双组（对照组与治疗组）无针刺治疗54篇，双组均用针刺治疗43篇，无针灸腧穴1篇，实施特殊针法15篇，实施特殊辅助疗法11篇，非单个治疗组（多于双组）27篇，未使用口服降糖药或注射胰岛素8篇，共剩202篇。

简单阅读文献中的“结果”后，排除：无临床疗效指标35篇，缺乏其他治疗指标51篇，治疗指标不明确29篇，治疗指标数据缺乏24篇，最后纳入63篇文献[见图1]。

纳入的63篇文献中，共5401例糖尿病周围神经病变患者，其中治疗组2738例，对照组2663例。全部文献都以中文进行发表。

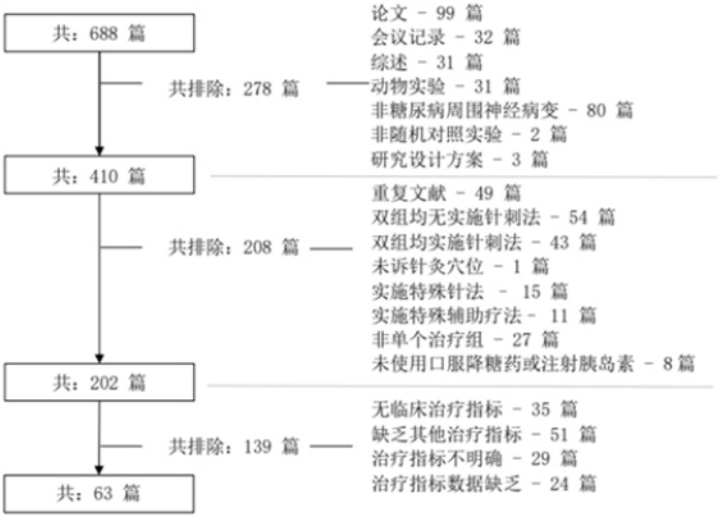

图1 检索结果图

2.2 纳入文献基本特征(略)

2.3 文献方法学质量评价

对纳入的63篇文献按照Cochrane评价手册5.0.1提供的“偏倚风险评估”表，进行方法学质量评价[1]，包括6方面：随机序列生成和分配隐藏、对病人及试验人员实施盲法、对结局评估者实施盲法、结果数据不完整、选择性报告、和其他偏倚。

2.3.1 随机序列产生

63篇文献中，仅有33篇文献记载例随机序列的产生方法。其中，3篇文献出现高度偏倚风险，主要按照患者的就诊循序分组；其余20篇则列为低度偏倚风险，

主要以随机数字表法和抽签法分组。剩余40篇因信息不详，归类为不确定（中度）偏倚风险 [见图2]。

2.3.2 分组隐藏性

63篇文献中，无文献记载分组隐藏 [见图2]。

2.3.3 盲法

63篇文献中，仅有1篇文献记载对受试者和工作人员的盲法，为双盲法。62篇文献中，均无记载实验结果的盲法 [见图2]。

2.3.4 不完整结局数据

63篇文献中，56篇文献的数据完整，因此列为低度偏倚风险。其余7篇文献则列为不清楚偏倚风险，其中原因包括病例脱落，数据总数不齐 [见图2]。

2.3.5 选择性报告研究结果

63篇文献中，无文献记载选择性报告研究结果 [见图2]。

2.3.6 其他偏倚

63篇文献中，均未出现其他偏倚风险，列为低度偏倚风险 [见图2]。

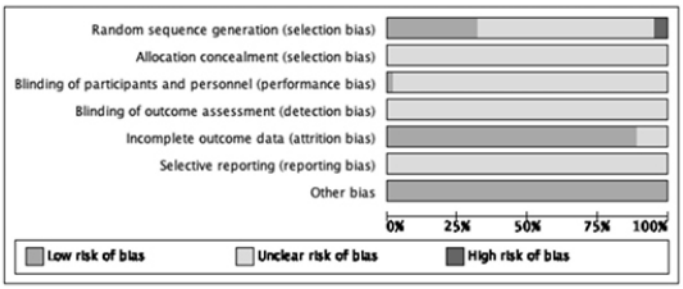

图2 偏倚风险评估结果（总结）

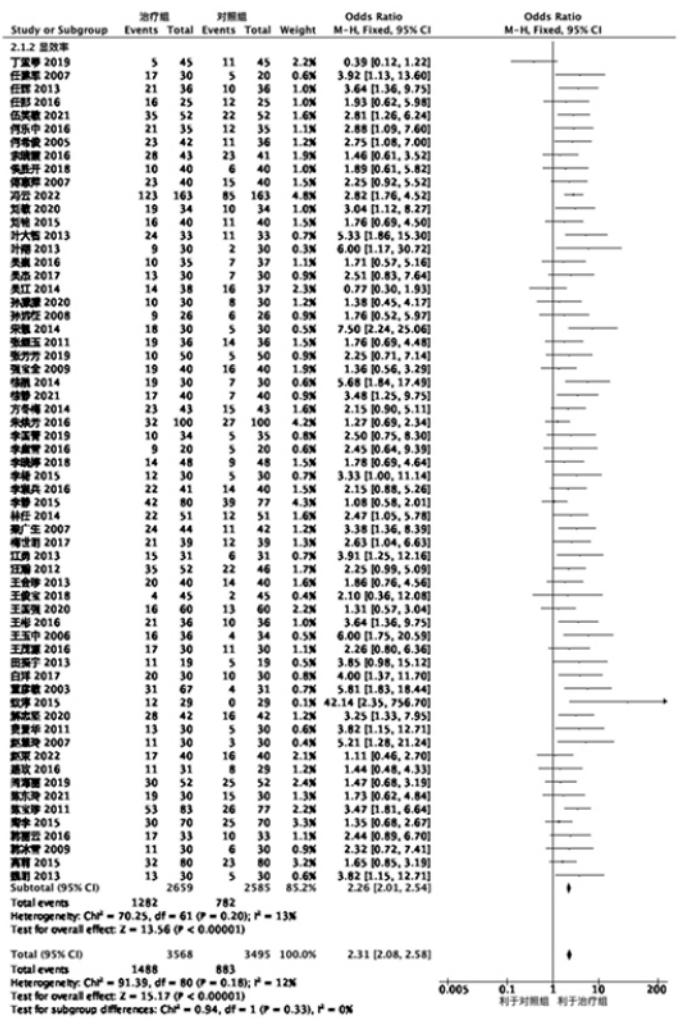

图3 有效率（森林图）续上

2.4 结局指标分析

2.4.1 有效率

对纳入的63篇文献的“治愈率、显效率”两个指标进行两组对比。异质性统计结果：x^2=91.39，df=80 (P=0.18)，I2=12%。因I^2<50%，P>0.01，各项研究的异质性较小，应使用固定效应模型进行分析。总体效应结果：OR=2.31，95% CI (2.08, 2.58)，Z=15.17，P<0.00001，森林图中菱形符号出现在中线的右边。结果显示：治疗组的治愈率及显效率明显优于对照组，并且有统计学意义 (P≤0.05) [见图3]。

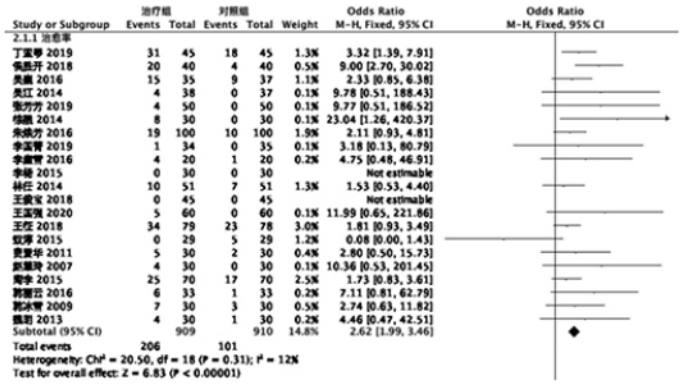

图3 有效率（森林图）

2.4.2 运动神经传导速度MNCV

1. 正中神经

纳入文献中一共有43篇文献研究了正中神经的MNCV。其中，27篇文献因两组服用的西药不同、或西药特殊、或中医辅助疗法特殊，怀疑影响文献分析的异质性，因此剔除于meta分析，最后对剩余16篇文献进行正中神经的MNCV的分析。异质性统计结果：x^2=25.78，df=15 (P=0.04)，I^2=42%。因 I2<50%，P>0.01，各项研究的异质性较小，应使用固定效应模型进行分析。总体效应结果：MD=3.53，95%CI (3.11,3.96)，Z=16.27，P<0.00001，森林图中菱形符号出现在中线的右边。结果显示：治疗组正中神经的MNCV明显优于对照组，并且有统计学意义 (P≤0.05) [见图4]。

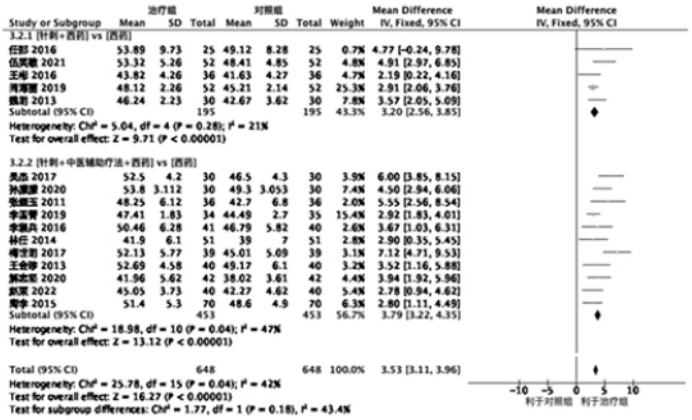

图4 正中神经MNCV（森林图）

2. 腓总神经

纳入文献中一共有49篇文献研究了腓总神经的MNCV。其中，32篇文献因两组西药不同、或使用西药特殊、或中医辅助疗法的不同，怀疑影响文献分析的异质性，因此剔除于meta分析，最后对剩余17篇文献进行腓总神经的MNCV的分析。异质性统计结果：x^2=21.41，df=16(P=0.16)，I^2=25%。因I2<50%，P>0.01，各项研究的异质性较小，应使用固定效应模型进行分析。总体效应结果：MD=4.25，95%CI (3.85,4.65)，Z=20.91，P<0.00001，森林图中菱形符号出现在中线的右边。结果显示：治疗组腓总神经的MNCV明显优于对照组，并且有统计学意义(P≤0.05)[见图5]。

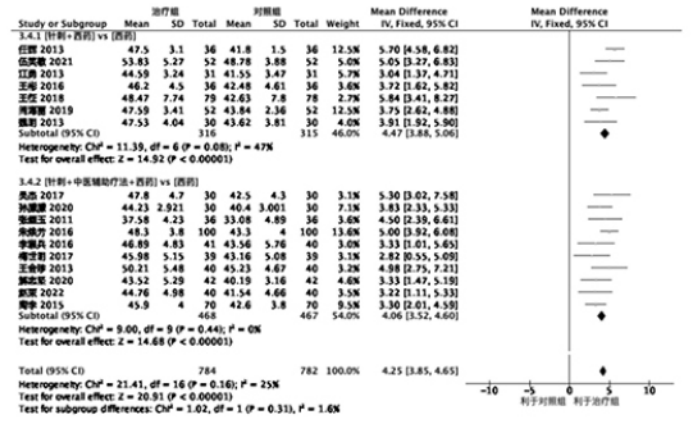

图5 腓总神经MNCV（森林图）

2.4.3 感觉神经传导速度 SNCV

1. 正中神经

纳入文献中一共有42篇文献研究了正中神经的SNCV。其中，26篇文献因两组服用的西药不同、或西药特殊、或中医辅助疗法特殊，怀疑影响文献分析的异质性，因此剔除于meta分析，最后对剩余16篇文献进行正中神经的SNCV的分析。异质性统计结果：x^2=20.24，df=15(P=0.16)，I^2=26%。因I2<50%，P>0.01，各项研究的异质性较小，应使用固定效应模型进行分析。总体效应结果：MD=4.24，95%CI (3.85,4.63)，Z=21.22，P<0.00001，森林图中菱形符号出现在中线的右边。结果显示：治疗组正中神经的SNCV明显优于对照组，并且有统计学意义 (P≤0.05)[见图6]。

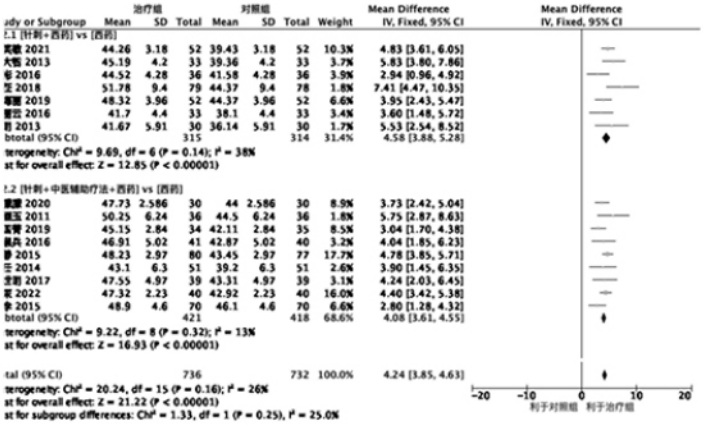

图6 正中神经SNCV（森林图）

2. 腓总神经

纳入文献中一共有41篇文献研究了腓总神经的SNCV。其中，25篇文献因两组服用的西药不同、或西药特殊、或中医辅助疗法特殊，怀疑影响文献分析的异质性，因此剔除于meta分析，最后对剩余16篇文献进行腓总神经的SNCV的分析。异质性统计结果：x^2=26.94，df=15(P=0.03)，I^2=44%。因I2<50%，P>0.01，各项研究的异质性较小，应使用固定效应模型进行分析。总体效应结果：MD=3.77，95% CI (3.44，4.10)，Z=22.22，P<0.00001，森林图中菱形符号出现在中线的右边。结果显示：治疗组腓总神经的SNCV明显优于对照组，并且有统计学意义(P≤0.05)[见图7]。

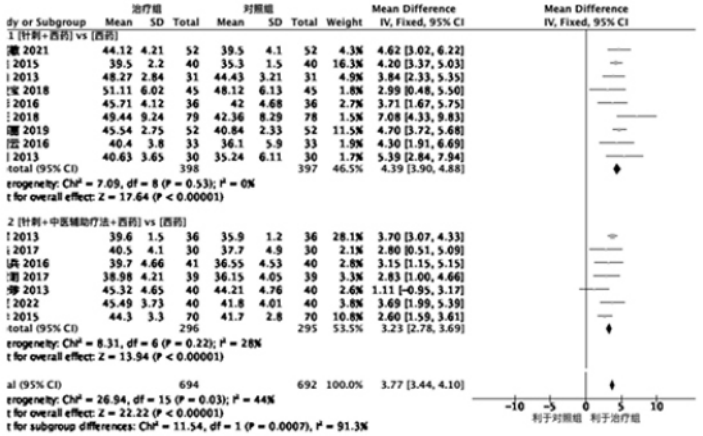

图7 腓总神经SNCV（森林图）

2.4.4 多伦多临床评分系统 TCSS 评分

纳入文献中一共有12篇文献研究了TCSS评分。其中，7篇文献因两组服用的西药不同、或西药特殊，怀疑影响文献分析的异质性，因此剔除于meta分析，最后对剩余5篇文献进行TCSS评分的分析。异质性统计结果：x^2=6.11，df=4 (P=0.19)，I^2=34%。因 I2<50%，

P>0.01，各项研究的异质性较小，应使用固定效应模型进行分析。总体效应结果：MD=-1.56，95%CI (-1.87,-1.26)，Z=9.94，P<0.00001，森林图中菱形符号出现在中线的左边（利于治疗组）。结果显示：治疗组的TCSS评分明显优于对照组，并且有统计学意义 (P≤0.05) [见图8]。

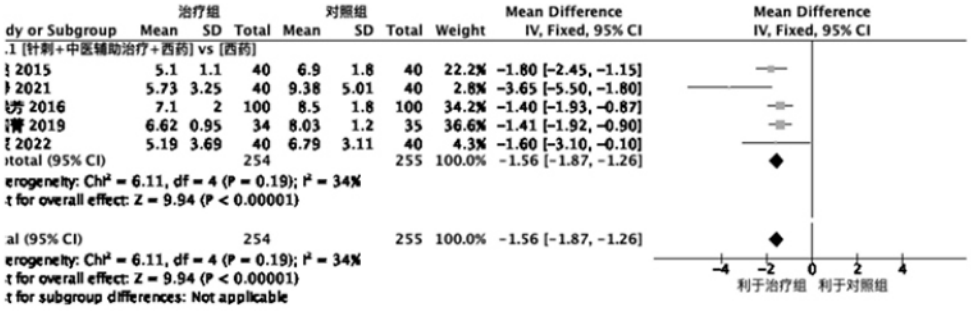

图8 TCSS评分（森林图）

2.4.5 不良事件

11篇文献报道了不良反应，其中9篇文献（81.8%）未出现不良事件，2篇文献（18.2%）中出现了不良事件。其中包括针刺时轻度晕针，穴位注射后穴位周围出现短暂性且非持续性的疼痛，及腹胀、皮疹、食欲不振、头晕等症状。

第一篇文献中共有10例不良反应（共326受试者），6例属治疗组，分别为腹胀2例、皮疹3例、食欲不振1例；4例属对照组，分别为腹胀1例、食欲不振2例、头晕1例。经文献作者的统计学分析，两组的不良反应总发生率的差异并无统计学意义 (P>0.05)。

第二篇文献中有1例不良反应（共98受试者），出现于治疗组。患者在首次治疗时有轻度晕针，经处理后未影响治疗及疗效。

由此可见，不良事件的发生次数不多，事件中也仅是轻微的不良反应，经简单处理后，未形成后遗症或严重的不良后果。因此，针刺治疗糖尿病周围神经病变是安全的。

3 讨论

糖尿病周围神经病变（DPN）是指在排除其他原因的情况下，糖尿病患者出现周围神经功能障碍相关的症状和（或）体征，常损害四肢的末梢部位[2]。其特点为多发性、对称性，下肢较严重。早期患者有肢端感觉异常，如麻木、灼热感、痛觉过敏或自发疼痛，呈袜套、手套样分布；肌电图上可表现为神经传导速度减慢。

现代医学对于DPN的病因和发病机制尚未完全阐明，大部分多学者认为，发病主要因长期的糖代谢异常，影响血管的扩张性和血液的流动性，从而导致微血管的病变[3]。对于DPN的治疗，现代医学仍缺乏明确的治疗方案，现代医学的主要治疗方向仍是严格控制血糖及其他代谢指标，并且对症治疗，延缓或避免糖尿病足的发生发展[4]。

在中医学里，消渴病主要是因禀赋不足、饮食失节、情志失调、劳欲过度等[5]，导致阴虚内热，肺脾肾脏腑功能失调，从而发展为消渴病。而因消渴日久、伤阴耗气、气血阴阳亏虚、血行瘀滞、脉络痹阻，导致消渴病痹症的发生与发展。消渴病痹症的病机主要是瘀血阻滞，兼有热盛、寒凝、阴虚、气虚和阳虚[6]。早在西晋就已记载了针灸治疗消渴病及其并发症的论述。

3.1 有效率讨论

总有效率分析发现，文献之间的异质性较低（I2<50%）、倒漏斗图相对对称，显示文献的发表性偏倚风险较低；并且治疗组的总有效率明显优于对照组（P<0.00001）。这说明临床症状和体征（如肢体麻木、疼痛）均有明显的改善，深浅感觉基本恢复正常，腱反射明显好转或恢复，密歇根糖尿病神经病变评分（MDNS）积分减少≥70%，神经电生理检查示神经传导速度较前提高>10%或较前增加5m/s以上或恢复正常。

由此可见，针刺能很好的改善肢端的麻木、灼热、疼痛等感觉异常，并能提升肢体反射功能和肌力，肌电图中的神经传导速度也可见明显的改善。研究发现，针刺不仅能修复神经传导，亦可改善血栓长度，从而改进糖尿病患者的血管损伤及血瘀高凝情况[7]，从而改善血液循环。

3.2 神经传导速度讨论

对照组与治疗组经治疗后的运动神经传道速度（MNCV）和感觉神经传道速度（SNCV）的初期分析发现，某些神经数据出现较大的异质性（I2>50%）、倒漏斗图也不对称，怀疑因文献纳入范围较广，导致文献中的辅助疗法或使用的西药种类繁多所致。因此，经文献归类，剔除与大部分文献不相符的个例后，分析发现异质性较低（I2<50%）、倒漏斗图也相对对称，显示文献的发表性偏倚风险较低。剔除文献后的分析显示，治疗组的疗效普遍明显优于对照组（P<0.00001）。

此结果揭示，针刺可通过提升神经中的神经生长因子[7]，恢复各神经的传导速度，从而改善神经功能，减缓糖尿病周围神经病变中不可或缺的神经传导速度减慢。

3.3 多伦多临床评分系统 TCSS 讨论

多伦多临床评分系统（TCSS）评分的对比发现，文献之间的异质性较高（I2>50%）、倒漏斗图也不对称，怀疑因文献纳入范围较广，导致文献中使用的西药种类繁多所致。因此，经文献归类，剔除与大部分文献不相符的个例后，分析发现异质性较低（I2<50%）、倒漏斗图也相对对称，显示文献的发表性偏倚风险较低。剔除文献后的分析显示，治疗组的疗效普遍明显优于对照组（P<0.00001）。

此结果表明，经针刺治疗后治疗组的足部及上肢的疼痛麻木无力感、神经反射（膝反射及踝反射）、感觉功能（四肢的针刺痛觉、触觉、温度觉、振动觉、位置觉等）均有明显改善。

3.4 针刺作用机制

临床研究显示，针刺治疗能让患者体内的胰岛素和C肽水平升高，从而降低患者的血糖值[7]。临床治疗还发现，针刺治疗可以通过改善血栓长度、纤维蛋白原、和血小板聚集情况，从而改进糖尿病患者的血瘀高凝情况[7]。多项临床研究验证了针刺治疗对DPN患者的神经传导功能的修复作用，使患者的神经传导速度、波幅和潜伏期比治疗前有着显著的改善[7]。一篇系统综述探讨234篇的临床研究发现，针灸对于糖尿病患者能起到改善葡萄糖耐受程度、改善胰岛素抵抗、并且降低空腹血糖[8]。

动物实验也发现针灸能通过多种机制改善胰岛素抵抗。一项动物研究发现针灸能维持内质网功能，及避免胰岛细胞的凋亡，因此改善胰岛素抵抗[9]。另一项研究发现针灸能促进线粒体合成及脂肪酸氧化，从而改善胰岛素抵抗[10]。多项动物实验也发现，糖尿病大鼠通过针刺治疗后，糖基化终末产物因子和糖基化终末产物受体因子受到了干扰，说明针灸治疗对神经系统的非酶蛋白糖基化反应形成压制效果[7]。动物实验中还发现，针刺后坐骨神经中的神经生长因子有明显的提升，说明针刺治疗能提升神经营养因子的作用，改善大鼠的周围神经病变[7]。

由此可见，临床研究与动物研究均显示针刺能通过稳定血糖、减少炎症及氧化反应、及促进血液循环及神经功能修复，从而减缓神经损伤，并恢复神经传导速度，缓解DPN。

3.5 不良事件讨论

文献中不良事件的发生率偏低，并且轻微、未发生后遗症或严重的不良后果。在发生了不良事件的两篇文献中，其中一篇只因患者首次针灸而出现晕针的表现，简单处理后，后期并无出现相同问题；另一篇中双组均出现不良反应（治疗组6例，对照组4例），但经统计后发现，不良反应的发生率并无统计学差异（P>0.05），因此说明治疗组与对照组所见的不良反应并非针灸所致。

由此可见，针刺未对患者照成不良的后果，因此可视为安全及有效。

3.6 展望

本次meta分析中，仅使用了两个文献数据库（中国知网CNKI及Pubmed），因此文献数量及质量有所欠缺。另外，为了广泛的探讨针刺对于DPN的治疗效果的总体规律，纳入文献的范围较广，其中包括不同的辅助治疗方法（如，配合口服中药、足浴外用等）、西医用药（如营养神经类药、抗氧化应激类药、抑制醛糖还原酶活性类药等）、治疗时间（短则2周，长则3个月）、中医证型等因素。因此分析结果显示，纳入文献之间的异质性较高，倒漏斗图不对称，提示可能存在偏倚风险。将个例剔除后可见异质性降低、倒漏斗图对称。

为提高研究结果的质量，排除偏倚风险，接下来应从更多数据库中收集更多高质量文献，并将其按照治疗方法、辅助治疗方法、治疗时间、中医证型等分类，再进行分析。

4 结论

总体而言，现代医学在DPN的治疗中主要以严格控制血糖、并使用营养神经药物配合物理疗法。对于DPN进一步恶化为糖尿病足的患者，截肢成为首要的治疗方案。截肢后导致的终身残缺给患者带来了日常生活的不便，使其的生活质量下降。

此次通过循证医学发现，针刺能提高DPN治疗的总体疗效，其中包括总体有效率、神经传导速度、及TCSS评分，因此视为有效的。针刺通过改善血管损伤及血瘀高凝情况、加速神经恢复等机制，从而改善DPN的麻痹疼痛感、神经传导异常、肌反射功能等。诸多文献中，不良事件的发生率不多，也未出现严重不良反映，因此视为安全的。

然而，诸多文献中的治疗方法大有不同，因此出现了文献之间较大的异质性，需更多高质量的同类研究以更好的体现治疗的有效性。

【参考文献】略

敏咳方治疗儿童过敏性咳嗽合并鼻炎（风痰郁热证）的随机对照研究

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辽宁中医药大学

目的：

通过收集新加坡过敏性咳嗽合并鼻炎（风痰郁热证）患儿的临床资料，观察本地区小儿过敏性咳嗽合并鼻炎的发病情况，探讨中药敏咳方干预此类疾病的疗效及安全性，为中医特色治疗提供新方案。

材料与方法：

本研究选取2022年6月至2024年6月期间就诊于新加坡宜康中医诊所，符合纳入标准的过敏性咳嗽合并鼻炎患儿72例，按随机数字表分成治疗组与对照组。治疗组采用中药敏咳方治疗，对照组给予西医基础治疗，7天为一个疗程，观察两个疗程。收集并记录患儿的一般资料、病例采集表、中医症状量化表及处方用药等，将收集资料录入数据库，并用统计软件分析。

结果：

本研究共纳入72例患儿，其中68例参与了本试验全过程，治疗组有4例病例未完成两个疗程的中药干预治疗而需剔除。患儿的好发年龄为3-6岁学龄前期，占67.60%，病程大多为1-3月，占60.29%。家族史多有鼻炎，既往史多见反复呼吸道感染。咳嗽好发于夜间，占72.06%，且主要因空调制冷环境诱发，占89.71%。屋尘螨是主要过敏原。基线数据统计学均无明显差异，可进行比较分析。评价治疗前后主症如咳嗽、咯痰、鼻塞流涕，次症体征如食欲、睡眠、面色及舌脉象，两组治疗后的积分均有改善且治疗组优于对照组，差异具统计学意义（$P<0.05$）。在中医证候总有效率方面，治疗组为100.00%，对照组为91.67%，治疗组优于对照组，差异具有统计学意义（$P<0.05$）。两组疾病复发率相当，差异无统计学意义。两组在治疗过程中均未见明显的不良反应及不良事件发生。

结论：

1. 新加坡气候湿热，因空调制冷环境影响及饮食习惯特点，小儿过敏性咳嗽合并鼻炎常见证型为风痰郁热证。学龄前儿童因抵抗力弱更易发病。预防的重点是减少接触过敏原，加强免疫力及适应环境因素。
2. 中药敏咳方通过上下气道同治，对过敏性咳嗽合并鼻炎（风痰郁热证）患儿起到干预治疗作用，特别是在咳嗽、咯痰及鼻塞流涕方面有显著疗效，值得进一步研究。

【关键词】过敏性咳嗽；鼻炎；新加坡；中药治疗

一、材料与方法

1. 研究对象

1.1 一般资料

本研究选取新加坡宜康中医诊所2022年6月至2024年6月期间前来诊病的3岁至15岁过敏性咳嗽合并鼻炎（风痰郁热证）患者72例，按随机数字表分成治疗组与对照组各36例。根据纳入标准和排除标准进行筛选。

2. 诊断标准

2.1西医诊断标准

2.1.1小儿过敏性咳嗽Atopic Cough，AC

参考《中国儿童慢性咳嗽诊断与治疗指南（2013年修订）》对小儿过敏性咳嗽的诊断标准：

（1）咳嗽持续>4周，呈刺激性干咳；

（2）肺通气功能正常，支气管激发试验阴性；

（3）咳嗽感受器敏感性增高；

（4）有其他过敏性疾病病史，变应原皮试阳性，血清总Ig E和(或)特异性Ig E升高；

（5）除外其他原因引起的慢性咳嗽。

2.1.2 小儿鼻炎（小儿变应性鼻炎）Allergic Rhinitis，AR

参照2011年《儿童变应性鼻炎诊断和治疗的专家共识》对小儿鼻炎的诊断标准:

临床表现：为阵发性喷嚏、水样涕、鼻痒及鼻塞症状为主，症状出现2项以上，每天症状持续或累计1小时以上，可伴有眼痒、结膜充血等眼部症状。

2.2 中医证型诊断标准

参照《中医儿科学》、《中医耳鼻咽喉科学》、《咳嗽的诊断与治疗指南》，结合AC和AR临床特点，制定风痰郁热证的诊断标准：

风痰郁热证

主要症状：久咳、刺激性干咳、痰少色黄难咯、鼻塞鼻痒，流黄黏鼻涕。

次要症状：咳剧易喘，咽痒咽干，舌红苔黄薄或腻，脉浮滑或滑数。

2.3 纳入标准

（1）符合小儿变应性咳嗽及鼻炎，风痰郁热证的中医诊断标准。

（2）符合小儿变应性咳嗽AC及鼻炎AR的西医诊断标准。

(3) 年龄介于3岁至15岁之间，性别不限。

家属同意配合治疗方案，自愿签署知情同意书，同意患儿参加临床受试者。

2.4 排除标准

(1) 不符合上述中西医诊断标准者；
(2) 合并心、肝、肾和造血系统等严重原发性疾病者、精神病患者；
(3) 重症呼吸系统疾病者应及时入院接受诊治；
(4) 资料不全，未按标准用药，无法判断疗效者；
(5) 对试验中使用中药的成分有过敏者或多种药物过敏者。
(6) 抗原快速监测（ART）阳性，冠状病毒Covid-19感染者。
(7) 其他急慢性咳嗽

2.5 剔除标准

(1) 研究过程中患者自行退出者；
(2) 在第二诊疗效中发现症状恶化者；
(3) 治疗过程中因伴发其他疾病，不适合或不愿继续接受试验者；
(4) 受试者依从性差，影响安全性和有效性评价者，研究者令其退出者。

3. 研究方法

3.1治疗方法

（1）治疗组：治以疏风通窍，宣肺止咳。

中药处方：敏咳方（止嗽散合剂加鼻通灵合剂，比例为1：1）

由新加坡药厂康华私人有限公司制造。

组成：桔梗、荆芥、紫菀、百部、白前、甘草、陈皮、辛夷、苍耳子、白芷、薄荷、金银花、连翘、鹅不食草、防风、广藿香。

敏咳方剂量及服法：

3-6岁患者给予30毫升/日，每次15毫升，日服2次。温水送服。

7-15岁患者给予60毫升/日，每次30毫升，日服2次。温水送服。

（2）对照组：与患儿家属沟通，嘱咐继续给予西医基础治疗（抗组胺药物、糖皮质激素），不给予任何中医治疗。

疗程：7天为一个疗程，观察两个疗程，观察两组临床治疗效果。

随访：停药1个月后电话随访，观察症状指标。

3.2 主要观察指标

（1）一般资料：性别、年龄、家族史、既往史、过敏史、病程时间等。
（2）药物疗效评价:①中医证候积分比较:主症：咳嗽发生时间及发作程度、咯痰、鼻塞流涕。次症及体征：食欲、面色、睡眠、舌脉象等。②证候疗效评价
（3）随访情况
（4）药物安全性评价

3.3 症状及体征评分标准

采用中医症状记分法，参考《中医病证诊断疗效标准》的分类原则拟定积分标准。本研究观察过敏性咳嗽合并鼻炎的主症将临床症状以重度计6分，中度计4分，轻度计2分，无计0分。次症及体征分别以0分、1分、2分代表不同的临床表现。中医舌脉象也以积分做比较。

3.4 证候疗效评定标准

参照中国医药科技出版社 2002 年出版的《中药新药临床研究指导原则》制定证候疗效评定标准：

（1）痊愈：主症、次症及体征和中医舌脉象总积分减少≥95%
（2）显效：主症、次症及体征和中医舌脉象总积分减少≥70%
（3）有效：主症、次症及体征和中医舌脉象总积分减少≥30%
（4）无效：主症、次症及体征和中医舌脉象总积分减少不足 30%

注：综合疗效指数计算方法采用尼莫地平法，证候积分减少 = [（治疗前积分- 治疗后积分）/ 治疗前积分] ×100%。

3.5 统计学处理与分析

把72例患儿的具体资料输入Microsoft Excel系统，将得到的资料数据均采用Excel，SPSS 25.0统计软件进行综合处理。整理录入数据后，采用 SPSS 25.0 软件进行统计分析，均数比较数据均采用 表示，符合正态分布的计量资料两组间比较使用独立样本t 检验，组内比较采用配对样本t 检验；等级计数资料及不符合正态分布的数据采用非参数检验，计数资料采用卡方检验进行频次及构成比比较，两组间疗效对比采用Wilcoxon秩和检验，以 $P<0.05$ 表示差异有统计学意义。

二、实验结果

1. 入组情况分析

此次临床试验纳入72例3岁至15岁过敏性咳嗽合并鼻炎（风痰郁热证）患儿，治疗组和对照组各36例。剔除脱落情况，治疗组剔除脱落4例，对照组无剔除病例。总剔除脱落率为5.56%。见表1、表2。

表1 患儿分组情况

组别	入组例数	剔除脱落情况	完成例数
治疗组	36	4	32
对照组	36	0	36

表2 患儿剔除脱落情况

组别	性别	年龄	具体描述
治疗组	男	6	未按研究方法服药
治疗组	男	6	患儿依从性差，因中药太苦，不欲继续服药
治疗组	男	5	未按研究方法服药
治疗组	男	5	患儿病情改变，不适合继续接受试验

2. 基本情况分析

2.1 患儿性别分布情况

治疗组有4例病例未完成两个疗程的中药干预治疗而需剔除，其他68例患儿完成治疗，治疗组男性20例，女性12例；对照组男性15例，女性21例。利用皮尔森（Pearson）卡方检验，两组性别比较结果为X2=2.944，P=0.086>0.05，表明本次研究两组患儿在性别方面没有差异，结果见表 3。

表3 患儿性别分布情况

类别	男性	女性	例数	P 值
治疗组	20	12	32	
对照组	15	21	36	P=0.086
总计	35	33	68	

2.2 患儿年龄分布情况

本研究将儿童分为三个年龄层：3－6岁为学龄前期，7－12岁为学龄期，12－15岁为青春期。其中以3－6岁学龄前期儿童为主，共46例，占67.60%。采用配对秩和检验进行数据分析，两组年龄比较结果，Z=-1.193，P=0.233>0.05，说明两组病例在年龄上并没有显著分别，结果见表 4。

表4 患儿年龄分布情况

类别	3-6岁	7-12岁	>12岁	平均（岁）	95% CI	P 值
治疗组	21	11	0	5.22±0.323	4.56-5.88	
对照组	25	11	0	4.67±0.264	4.13-5.20	P=0.233
总计	46	22	0			

2.3 患儿病程时间分布情况

采用配对秩和检验进行数据分析，患儿的病程1-3月居多占60.29%，4-5月占20.59%，6-11月占16.18%，12月以上占2.94%。两组病程比较结果，Z=-0.623，P=0.533>0.05，说明两组在病程上无显著差异，结果见表 5。

表5 患儿病程时间分布情况

类别	1≤病程＜4月	4≤病程＜6月	6≤病程＜12月	≥12月	平均（月）	P 值
治疗组	20	7	5	0	3.75±0.527	
对照组	21	7	6	2	6.08±1.455	P=0.533
总计	41 (60.29)	14 (20.59)	11 (16.18)	2 (2.94)		

2.4 患儿家族史

患儿家族史以鼻炎最常见，占100.00%，其次为特应性皮炎（湿疹）41.18%和哮喘占36.76%，结果见表6。

表6 患儿家族

类别	例数（n）	比例（%）
鼻炎	68	100.00
湿疹	28	41.18
哮喘	25	36.76
荨麻疹	5	7.35
其他	6	8.82

2.5 患儿既往史

患儿既往史多见反复呼吸道感染（疾病包括气管炎、支气管炎、肺炎、扁桃体炎和咽炎）占39.71%和湿疹占33.82%，结果见表 7。

表7 患儿既往史

类别	例数（n）	比例（%）
湿疹	23	33.82
哮喘	1	1.47
反复呼吸道感染	27	39.71
手足口症	16	23.53

2.6 咳嗽好发时间段

患儿咳嗽的好发时间以夜间和晨起居多分别为72.06%及55.88%，结果见表 8。

表8 咳嗽好发时间段

类别	例数（n）	比例（%）
晨起	38	55.88
夜间	49	72.06
日间	17	25.00
临睡前	26	38.24

2.7 引发咳嗽因素

引发患儿咳嗽的因素多以冷空调89.71%，卧位69.12%及食入甜食51.47%,结果见表 9。在新加坡室内空调温度较冷，因此空调制冷环境可诱发咳嗽及鼻塞流涕等症状。

表9 引发咳嗽因素

类别	例数（n）	比例（%）
冷空调	61	89.71
卧位	47	69.12
运动	4	5.88
特殊气味	5	7.35
食入甜食	35	51.47
情绪激动	6	8.82
宠物皮屑/毛发	5	7.35
毛绒玩具	9	13.24

2.8 过敏史

83.3%的患儿未出现任何药物及食物过敏史。6.90%的患儿对西药（如抗生素、抗组胺药物）过敏。9.70%的患儿有食物过敏史，例如鸡蛋、麸质、花生、坚果类食材过敏。

2.9 过敏原

引发患儿咳嗽和鼻炎发作的过敏原多以屋尘螨92.65%，粉尘42.65%及毛绒玩具13.24%，结果见表10。

表10 过敏原

类别	例数（n）	比例（%）
屋尘螨	63	92.65
粉尘	29	42.65
花粉	1	1.47
霉菌	3	4.41
宠物皮屑/毛发	5	7.35
毛绒玩具	9	13.24

2.10 患儿食量及饮食偏嗜情况

关于患儿的饮食情况，26.40%的患儿食量偏少，13.90%患儿食量偏多。52.80%患儿有偏食，其中以偏甜食较多，占37.50%，结果见表11。

本研究的患儿对饮食没有克制，平日喜欢食用高糖分高热量的食品，如巧克力、蛋糕、饼干、冰淇淋和甜点。

表11 患儿饮食偏嗜情况

饮食	例数（n）	比例（%）
无偏食	34	47.20
偏食肉	5	6.90
少肉	5	6.90
偏食蔬菜	2	2.80
少蔬菜	7	9.70
偏甜食	27	37.50
偏主食	7	9.70
少主食	1	1.40
偏煎炸	4	5.60

2.11 患儿睡眠及精神情绪

关于患儿睡眠情况，65.30%的患儿长期夜卧不安，有2.80%的患儿有夜间磨牙的习惯。有关患儿精神情绪，15.30%患儿情绪偏急躁易怒，1.40%患儿郁郁寡欢，2.80%患儿偏兴奋。结果见表12。

表12 睡眠及精神情绪

睡眠及精神情绪	例数（n）	比例（%）
正常	23	31.90
夜卧不安	47	65.30
夜间磨牙	2	2.80
急躁易怒	11	15.30
郁郁寡欢	1	1.40
兴奋	2	2.80

3. 药物疗效评价分析

3.1 治疗前后主要症状积分比较

3.1.1 咳嗽发生时间及发作程度治疗前后比较

经统计分析后，两组组间比较得出 P=0.010<0.05，表明对于咳嗽发生时间及发作程度的治疗上两组效果有差异，治疗组优于对照组，见表13。

表13 咳嗽发生时间及发作程度治疗前后比较

组别	症状积分		组内比较		组间比较	
	治疗前	治疗后	Z 值	P 值	Z 值	P 值
治疗组	8.69±0.248	2.44±0.367	-5.033	0.000	-2.588	0.010
对照组	8.39±0.192	3.83±0.351	-5.155	0.000		

注：咳嗽发生时间及发作程度治疗前后比较用秩和检验（组间：曼惠特尼检验，组内威尔科克森符号秩检验）

3.1.2 咯痰治疗前后比较

经统计分析后，两组组间比较得出 P=0.001<0.05，表明对于咯痰的治疗上两组效果有差异，治疗组优于对照组，见表14。

表14 咯痰治疗前后比较

组别	症状积分		组内比较		组间比较	
	治疗前	治疗后	Z 值	P 值	Z 值	P 值
治疗组	3.28±0.162	0.56±0.185	-4.849	0.000	-3.296	0.001
对照组	3.72±0.162	1.44±0.189	-4.738	0.000		

注：咯痰治疗前后比较用秩和检验（组间：曼惠特尼检验，组内威尔科克森符号秩检验）

3.1.3 鼻塞流涕治疗前后比较

统计分析显示，两组鼻塞流涕症状治疗前后差异显著（P<0.05），说明均有明显疗效。两组组间比较得出P=0.024<0.05，表明对于咯痰的治疗上两组效果有差异，治疗组优于对照组，见表 15。

表15 鼻塞流涕治疗前后比较

组别	症状积分		组内比较		组间比较	
	治疗前	治疗后	Z 值	P 值	Z 值	P 值
治疗组	3.94±0.203	1.38±0.166	-4.886	0.000	-2.256	0.024
对照组	3.44±0.151	1.94±0.169	-4.669	0.000		

注：鼻塞流涕治疗前后比较用秩和检验（组间：曼惠特尼检验，组内威尔科克森符号秩检验）

3.2 次症及体征治疗后积分比较

本研究以两组患儿次症及体征积分进行比较分析。结果显示：在食欲、睡眠、面色，P<0.05，有统计学差异，说明治疗组在这些症状的改善优于对照组；而瘙痒、咽痛、手足心热、口渴、汗出、情绪、大便方面，P>0.05，无统计学差异，表示两组治疗效果相当，见表 16。

表16 次症及体征治疗后积分比较

次症及体征	治疗组	对照组	Z 值	P 值
瘙痒	0.84±0.065	0.89±0.077	-0.378	0.706
咽痛	0.00±0.000	0.00±0.000	0.000	1.000
手足心热	0.06±0.043	0.11±0.053	-0.700	0.484
口渴	0.19±0.070	0.22±0.070	-0.351	0.726
汗出	0.09±0.052	0.22±0.070	-1.425	0.154
食欲	0.09±0.052	0.31±0.078	-2.140	0.032
睡眠	0.19±0.070	0.53±0.084	-2.883	0.004
情绪	0.09±0.052	0.17±0.063	-0.879	0.379
大便	0.19±0.070	0.22±0.070	-0.351	0.726
面色	0.59±0.088	0.92±0.061	-2.879	0.004

3.3 治疗后舌脉象积分比较

对两组患儿治疗后中医舌脉象积分差值比较，舌象P=0.025，脉象P=0.012，舌脉象均P<0.05，组间差异有统计学意义，说明治疗组在中医舌脉象的改善优于对照组。（表17）

表17 中医舌脉象积分比较

中医舌脉象	治疗组	对照组	Z 值	P 值
舌象	0.75±0.078	0.94±0.039	-2.243	0.025
脉象	0.72±0.081	0.94±0.039	-2.504	0.012

3.4 证候疗效评价

研究的治疗观察期为两个疗程，治疗组有4例脱落病例，其他患儿完成治疗。在中医证候总有效率方面，治疗组为100.00%，对照组为91.67%；采用Wilcoxon秩和检验，Z=-2.365，P=0.018<0.05，差异有统计学意义，治疗组优于对照组，见表18。

表18 中医证候疗效评定结果（例，%）

组别	总计	痊愈	显效	有效	无效	愈显率	总有效率
治疗组	32	2	10	20	0	37.5	100.00
对照组	36	0	6	27	3	16.7	91.67
总计	68	2	16	47	3		

4. 随访情况

停药后1个月对本研究68位患儿进行随访，两组复发例数共为32例，其中治疗组12例，对照组20例，复发率分别为37.50%和55.56%。通过皮尔森（Pearson）卡方检验，两组复发率差异无统计学意义(X^2=2.217, P=0.137>0.05），见表19。

表19 随访患者复发情况分析

	治疗组	对照组	总计	P 值
无复发	20 (62.50)	16 (44.44)	36	0.137
复发	12 (37.50)	20 (55.56)	32	
总计	32	36	68	

5. 药物安全性评价分析

两组在治疗过程中均未见明显的不良反应及不良事件发生，生命体征平稳。

三、讨论

1. 新加坡小儿过敏性咳嗽合并鼻炎情况

此次研究发现，新加坡患儿在年龄分布上以学龄前期（3-6岁）儿童为主，占比高达67.60%，发病率随着年龄的增长而逐渐降低。患儿病程为1-3月居多，占比60.29%。虽然国际儿科年龄为0-18岁，本研究选择3-15

岁年龄段的患儿作为研究对象，主要基于以下考虑：（1）生理和发育特点：3岁以下儿童的免疫系统和器官发育尚不完善，药物代谢机制与较大儿童差异不同，用药安全性风险较高。15岁以上的青少年机体功能逐渐接近成人，用药剂量和病理特点与成人相似，因此研究偏向成人领域。（2）临床资料的收集：新加坡16-18岁的青少年学业较繁忙，可能不能按研究需要复诊，而影响数据。3-15岁患儿的临床资料更容易获取，且能反映敏咳方在该年龄段不同阶段的疗效和安全性。因此选择3-15岁年龄段的患儿。

目前关于儿童过敏性咳嗽的病理机制，普遍有以下观点：（1）国外研究发现儿童过敏性咳嗽的嗜酸性粒细胞主要浸入于中央气道，特别是气管和支气管。（2）患儿的咳嗽反射敏感性增高。气道中的传入神经末梢存在咳嗽感受器，其中分布最密集的感受器位于咽部和气管隆凸处。（3）儿童机体内辅助性T细胞Th1 /Th2 免疫平衡失调，导致持续性气道的炎症和过敏现象。

此研究观察65.30%的患儿长期夜卧不安，其中有夜间磨牙的习惯。另外，15.30%的患儿情绪偏急躁易怒，1.40%的患儿郁郁寡欢，2.80%的患儿偏兴奋。有家长发现患儿在考试等紧张情绪下会出现咳嗽、鼻塞和咽痒，提示情绪因素影响过敏性咳嗽和鼻炎的发作。长期迁延的病情不仅影响患儿睡眠，还可能进而影响日常生活和心理健康。

研究发现患儿咳嗽多在夜间（72.06%）和晨起（55.88%）发作，提示夜间气道反应性增强，或与尘螨活动有关；另有69.12%在卧位时咳嗽，表明睡姿变化可能加重症状。研究显示89.71%的患儿因冷空调诱发病情。新加坡常年高温高湿，室内空调温度普遍较低（20℃至25℃），与室外温差大，易刺激呼吸道，诱发鼻痒、黄涕、咽痒、干咳等症状。

本研究发现，52.80%的患儿存在偏食，其中偏甜占37.50%。新加坡儿童常过量摄取高糖高热量食物，如巧克力、蛋糕等。脾为生痰之源，肺为储痰之器，过量的甜食导致脾运化功能弱，痰湿内聚化热，阻扰肺窍则引发咳嗽、咯黄粘痰等。故应注意饮食调护，营养均衡，以预防慢性咳嗽反复发作。

另外，本研究观察过敏原多为屋尘螨92.65%，粉尘42.65%及毛绒玩具13.24%。新加坡炎热潮湿的气候有利于尘螨繁殖。除此之外，粉尘、霉菌孢子、宠物皮屑等也常见于室内外空气中，易刺激呼吸道，引发过敏反应。现代医学认为“风邪”也包括多种致敏因素，如吸入性、食入性、接触性、感染性及季节性过敏原，以及环境和物理刺激（如冷空气、运动）等。接触过敏原后，鼻黏膜充血肿胀引起鼻塞，儿童因纤毛功能弱，易咽痒、干咳。

研究显示，新加坡患儿家族史中鼻炎最常见（100%），湿疹41.18%，哮喘36.76%。久病导致患儿正气虚弱，过敏性咳嗽和鼻炎反复发作，病程较长难愈。患儿既往多有反复呼吸道感染（39.71%）和湿疹（33.82%）。家长经常误认为孩子咳嗽由感染引起，孩子服用抗生素后症状未改善，导致抗拒继续用药。抗生素对过敏性咳嗽无效，易造成误诊、免疫功能受损，形成恶性循环。

2. 敏咳方组成与分析

本次研究主要采用疏风通窍，宣肺止咳法，观察中药敏咳方干预小儿过敏性咳嗽和鼻炎（风痰郁热证）的临床疗效。治疗组采用中药敏咳方（止嗽散合鼻通灵合剂，比例1：1），由新加坡药厂康华私人有限公司制造。原方止嗽散出自清代程钟龄《医学心悟》，鼻通灵合剂则是从苍耳子散（《济生方》）化裁而来。敏咳方药物组成为：桔梗、荆芥、紫菀、百部、白前、甘草、陈皮、辛夷、苍耳子、白芷、薄荷、金银花、连翘、鹅不食草、防风及广藿香。

方中白芷辛温，具有祛风除湿，通窍止痛；荆芥辛散气香，疏风解表，且药性偏和缓，适用于儿童，两者共为君药。方中紫菀、百部味苦而温润，下气化痰，理肺止嗽，共为臣药。苍耳子、辛夷和鹅不食草的药性辛散温通，一起同用可宣通鼻窍，改善鼻塞流涕的症状。桔梗药性辛、苦，平，开宣肺气而化痰。白前辛苦，微温，助降气祛痰而止咳。陈皮理气健脾，燥湿化痰，且辛行苦泄而能宣肺止咳，是治痰之要药。防风辛甘性温，为风药中之润剂，祛风之力较强，有助祛风除湿，散寒止痛。藿香药性辛温能解在表之风寒，芳香之气能化郁久之湿浊。金银花、连翘药性偏寒为佐药，能透热达表，疏散上焦之热，又可清热解毒。薄荷辛香祛风，宣散表邪，芳香通窍，可引药上行，利咽喉。甘草为使药，益气和中，调和诸药。

3. 中药敏咳方疗效评价

本研究中观察中药敏咳方疗效评价，治疗后患儿主症如咳嗽发生时间和发作程度、咯痰、鼻塞流涕，次症体征如食欲、睡眠、面色及中医舌脉象均较治疗前有改善，且组间比较差异具统计学意义（$P<0.05$），说明治疗组优于对照组。对于瘙痒、咽痛、手足心热、口渴、汗出、情绪、大便方面，两组治疗效果相当，组间比较并无显著差异。

在中医证候疗效方面，治疗组的总有效率为100.00%,对照组的总有效率为91.67%，采用Wilcoxon秩和检验，差异有统计学意义（$P=0.018<0.05$），治疗组优于对照组。停药后 1 个月对本研究患儿进行随

访，两组复发例数共为32例，其中治疗组12例，对照组20例，复发率分别为37.50%和55.56%，差异无统计学意义(P=0.137>0.05）。由于本次研究的治疗时间为两个疗程，这提示敏咳方在治疗儿童过敏性咳嗽和鼻炎在发作期有一定的快速短期疗效，但治疗的持久效果仍有待进一步验证。

治疗组32名患儿顺利完成两个疗程的中药敏咳方治疗，期间无不良反应报告。治疗组中4名5至6岁患儿未完成两个疗程的中药治疗被剔除，其中一人因中药味苦要求中断治疗。中医认为苦味药有清热解毒功效，但部分患儿因苦味不适，难以长期服用。为提高患儿治疗依从性，可通过加蜜糖或甘草减轻中药苦味，或采用胶囊、膏方等现代制剂改善口感。同时，家长和中医师应给予鼓励和心理疏导，帮助患儿适应中药味道，促进配合治疗。

4. 本论文研究不足与展望

本研究68例患儿完成两个疗程治疗，治疗组32例，对照组36例，样本量较小。未来需开展大样本、多中心研究验证中药敏咳方疗效。因非盲设计，患儿及家长知晓分组，可能产生安慰剂效应，影响结果。今后可探讨中西医结合治疗对久咳和鼻炎的快速缓解及长期调理效果。

为减少偏差，未来研究应采用三盲设计，确保患儿、医师和统计人员均不知分组，有效降低主观影响，更准确评估中药敏咳方疗效。同时，应考虑新加坡患儿个体差异，探索最佳剂量、服药时间和疗程，优化治疗方案。

四、结论

1.新加坡小儿过敏性咳嗽合并鼻炎情况

新加坡地理位置靠近赤道地区，气候湿热，因空调制冷环境影响及饮食习惯特点，小儿过敏性咳嗽合并鼻炎常见证型为风痰郁热证。学龄前儿童因抵抗力弱更易发病。预防的重点是减少接触过敏原，加强免疫力及适应环境因素。

2.中药敏咳方临床疗效

中药敏咳方通过上下气道同治，对过敏性咳嗽合并鼻炎（风痰郁热证）患儿起到干预治疗作用，特别是在咳嗽、咯痰及鼻塞流涕方面有显著疗效，值得进一步研究。

【参考文献】略

The efficacy of integrative medicine in the treatment of essential hypertension: a meta-analysis

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摘要

目的：

本研究旨在评估中西医结合治疗原发性高血压的临床疗效。

方法：

本研究依据PRISMA-P报告规范，系统性检索2002年至2022年间发表的符合纳入标准的随机对照试验。采用Cochrane偏倚风险评估工具对纳入研究进行质量评价，使用Review Manager 5.4.1软件进行Meta分析。同时，运用Apriori关联算法分析处方规律，构建原发性高血压的核心中药网络。

结果：

共纳入32项研究，累计2926例患者。Meta分析结果显示，中西医结合治疗组在总体疗效方面优于西医治疗组 [RR=1.15, 95% CI (1.10, 1.20), p<0.00001]。中西医结合治疗组在终末收缩压水平[MD=-10.96, 95% CI (-15.44, -6.47), p<0.00001]，终末舒张压水平[MD= -6.11, 95% CI (-8.18, -4.04), p<0.00001] 及中医证候评分方面 [RR= 1.26, 95% CI (1.20,1.33), p<0.00001] 优于西医治疗组。处方规律分析结果显示，原发性高血压的核心中药包括牛膝、天麻、钩藤和杜仲。

结论：

中西医结合治疗在降低血压及缓解原发性高血压患者临床症状具有一定疗效。但由于纳入研究方法学质量普遍不高，仍需开展设计严谨、周期更长的随机对照试验以进一步验证其疗效。

【关键词】 中西医结合；原发性高血压；Meta 分析；核心方药分析

ABSTRACT

Objective: We aim to evaluate the efficacy of integrating Chinese and modern medicine in the management of essential hypertension. Methods: Five electronic databases were systematically searched for eligible randomised clinical trials from 2002 to 2022, according to PRISMA-P terminologies. Quality assessment for the included studies was assessed using the criteria from Cochrane Risk of Bias guidelines. Meta-analysis was conducted in the Review Manager 5.4.1 software. The apriori-association algorithm was used to characterise prescription regularities and elucidate the core herbal network for essential hypertension. Results: Our search yielded a total of 32 studies comprising 2926 patients. Meta-analysis revealed the integrative intervention group presents higher overall efficacy than that of the conventional treatment group [RR=1.15,95%CI (1.10,1.20), p<0.00001]. The intervention group experienced better therapeutic outcomes in terms of endpoint systolic [MD= -10.96, 95% CI (-15.44, -6.47), p<0.00001] and diastolic [MD= -6.11, 95% CI (-8.18, -4.04), p<0.00001] blood pressures, as well as TCM syndrome scores [RR= 1.26, 95% CI (1.20,1.33), p<0.00001]. We also characterised the core herbal network for hypertension to be Achyranthes bidentate (Niuxi), Gastrodia elata (Tianma), Uncaria rhynchophylla (Gouteng), and Eucommia ulmoides (Duzhong). Conclusion: We suggest that integrative medicine might be effective in lowering blood pressure and alleviating symptoms for patients with essential hypertension. Nonetheless, the evidence remains weak due to unclear methodological quality of the included studies. Well-designed and long-term clinical trials are required to further warrant its use.

Keywords – Chinese medicine; Essential hypertension; Integrative medicine; Meta-analysis; Core prescription analysis.

1. INTRODUCTION

Hypertension has been one of the major modifiable risk factors for cardiovascular disease and all-cause mortality, affecting more than 1.3 billion people globally (Mills et al., 2020). The condition has long been regarded as "the silent killer" due to its asymptomatic nature, with 46% of adults unaware that they possess the condition, and only 1 in 5 adults (WHO, 2021) with hypertension have it under control. Existing conventional treatment methods include lifestyle modifications and drug intervention, including diuretics, Angiotensin II receptor blocker, channel blockers (Nguyen et al., 2010). However, only 25% of patients achieve their blood pressure reduction goal (MacMahon

et al., 2008; Sarafidis & Bakris, 2008). Thus, we require alternative treatment methods which can better control blood pressure.

Traditional Chinese Medicine (TCM) is an alternative medicine that has been around for thousands of years. There has been a wide array of TCM treatments used to alleviate high blood pressure, most commonly Chinese herbal medicine, acupuncture, taichi and more (Health, 2019). To date, there has been limited meta-analysis done to investigate the efficacy of integrative medicine on the common syndrome type of hypertension: Hyperactivity of Liver Yang. Together with the rising demand for more effective therapies to treat hypertension, there is a need to investigate the efficacy of the integration of Chinese and modern medicine on hypertension. We aim to systematically evaluate the efficacy and safety of TCM combined with modern medicine in the treatment of essential hypertension. Additionally, by integrating machine learning and data mining approaches (Poon & Poon, 2014), this study aims to provide critical insights on prescription regularities and elucidate the core herbal network for essential hypertension.

2. METHODS

This meta-analysis was modelled after the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020 Statement) (Page et al., 2021).

2.1 Search strategy

Relevant studies from 2002 to 2022 were being sourced from the following five databases: Cochrane Library (Cochrane Central Register of Controlled Trials), PubMed, EMBASE, Web of Science and CNKI (China National Knowledge Infrastructure). There was no language restriction applied. The search strategy used was ("integrat*" OR "combin*") AND ("Traditional Chinese medicine" OR "Chinese medicine" OR "herbal decoction") AND ("hypertension" OR "high blood pressure" OR "elevated blood pressure") AND ("randomized controlled trial" OR "randomized clinical trial" OR "randomized" OR "randomised"). Additionally, the reference list of identified papers were manually screened.

2.2 Selection of studies

The selection of articles was in strict accordance with the set of inclusion and exclusion criteria.

2.2.1 Inclusion criteria:

(a) published randomised clinical trial (RCTs), regardless of blinding;
(b) patients who are diagnosed with primary/essential hypertension according to the WHO-International Society of Hypertension definitions (Unger et al., 2020) – systolic blood pressure (SBP) ⩾ 140mmHg and diastolic blood pressure (DBP) ⩾ 90mmHg;
(c) control group (CG) used conventional anti-hypertensive drugs;
(d) experimental group (EG) applied TCM treatment inclusive of herbal decoction, herbal powder, granules, and patented Chinese medicine alongside conventional anti-hypertensives;
(e) studies which used a comprehensive set of outcome measures such as overall efficacy, endpoint blood pressure, TCM syndrome and symptom differentiation scores (TCM-SSD);
(f) patients with the specific TCM syndrome type – Hyperactivity of the Liver Yang.

2.2.2 Exclusion criteria:

(a) animal studies;
(b) non-RCTs such as single case reports and conference proceedings;
(c) studies with missing data and incomplete outcome measures;
(d) studies which used single herb extract and parenteral admission of herbs;
(e) other TCM interventions such as acupuncture, moxibustion, needle-knife therapy, tuina, and any other modalities not mentioned in the inclusion criteria;
(f) studies with patients having other disease complications such as arrhythmia, kidney failure, HIV, AIDS, liver damage, obesity, and hyperlipidaemia;
(g) studies with patients being diagnosed with secondary hypertension, gestational hypertension, and isolated systolic hypertension.

Duplicate publications were removed using EndNote and manual elimination. Titles and abstracts of the articles were subsequently being screened according to the aforementioned eligibility criteria. Articles that did not meet the criteria were being excluded. The remaining candidate studies underwent full-text screening which further eliminated unsuitable studies.

2.3 Data extraction

The data extracted from the final full texts included basic information (author, publication year), as well as participants' demographic details (sample size, gender, average age), disease duration, TCM and modern medicine diagnostic criteria guideline, intervention for control and experimental group, outcome measure data (includes overall efficacy, endpoint blood pressure and TCM-SSD score), duration of intervention and follow-up duration.

2.4 Risk of bias assessment

Cochrane Collaboration Risk of Bias Tool (Higgins et al., 2019) was being used in this study to assess the risk of bias of individual studies included in our review. With close accordance to the Cochrane Handbook criteria, we graded studies with low, unclear, and high risk of bias by assessing 6 main criteria: Sequence generation

(selection bias), Allocation concealment (selection bias), Blinding of participants personnel and outcome assessors (performance and detection bias), Incomplete outcome data, Selective outcome reporting and other sources of bias.

2.5 Meta-analysis

Cochrane's Review Manager 5.4.1 software was used for the meta-analysis for primary and secondary outcome measures. Dichotomous data was presented as relative risk ratio (RR) with 95% confidence interval (CI) while continuous data was presented as mean difference (MD) with 95% CI. Heterogeneity of the included trials were being examined with the Higgins I2 statistics (Cohen, 2013). A random-effects model was adopted if I2 > 50% or Chi2 p < 0.1; otherwise, a fixed-effect model was applied. We used the overall efficacy, endpoint SBP and endpoint DBP as the primary outcome measures for the meta-analysis. The TCM-SSD score was used as the secondary outcome measure.

2.6 Sensitivity Analysis

Sensitivity analysis was conducted in R Studio 4.1.1 using "meta" and "metafor" packages (Schwarzer, 2007; Viechtbauer & Viechtbauer, 2015). Publication bias (Rothstein et al., 2005) was evaluated for small study effects with funnel plots (Borenstein et al., 2021). Thereafter, the Egger's regression test (Egger et al., 1997) was used to quantitatively assess for asymmetry in the funnel plot.

2.7 Core prescription analysis

Data was being processed in R-Studio Version 4.1.1 with the tidyverse, arules and arulesViz packages (Hahsler et al., 2022). The herbs used in each study was being read as a transaction in R and the relative frequency plot for the distribution of herbs was being generated. The apriori association-based algorithm (Borgelt & Kruse, 2002) was used to elucidate the core herbal prescription network in the treatment of essential hypertension. The application of association rule analysis can help identify the relationship between herb pairs (Shang et al., 2017). Each herb is treated as an itemset and an association rule means a pair $X \rightarrow Y$, where X and Y are different herbs in our data. The support for rule $X \rightarrow Y$ is the frequency with which the X and Y pair appears together, while the confidence is the probability of Y given the occurrence of X. The strength of herb pairs can be derived by the lift value. We deciphered the optimum support degree and confidence level to be 60% and 95% respectively.

3. RESULTS

3.1 Summary of results

The initial databases and cross-referencing search yielded a total of 1049 candidate studies, of which a full text review was performed for 313 of the studies. Eventually, 32 studies met the inclusion and exclusion criteria and were being included in our meta-analysis (Figure 1).

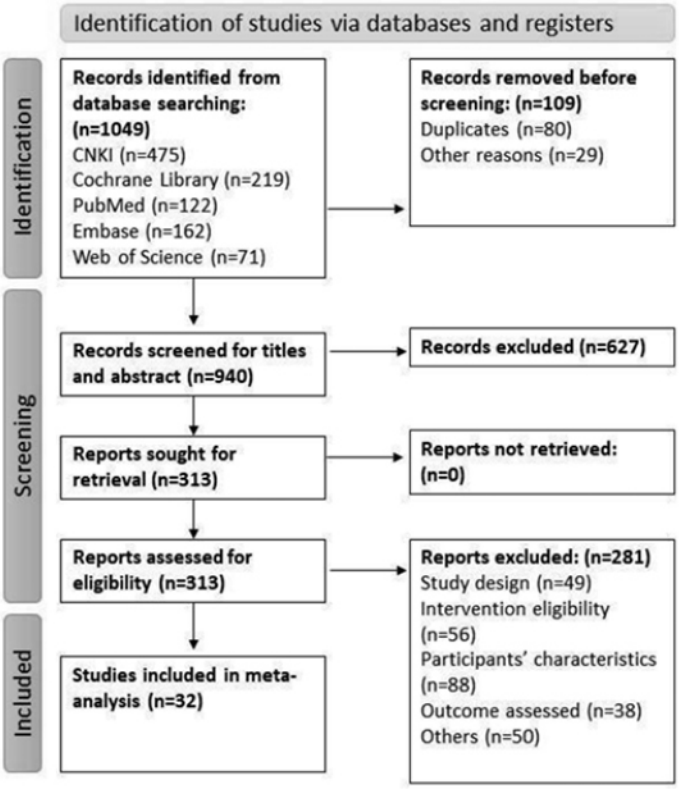


Figure 1. PRISMA flowchart of literature search and trials selection.

3.2 Characteristics of included studies

The final 32 studies compare between control group versus intervention group. The 32 studies consist of 2926 participants in total, with the average sample size being 91.4 per study. Most studies reported the guidelines used for modern medicine and TCM diagnosis for hypertension, however, 8 studies did not report TCM diagnostic guidelines, and 6 studies did not state modern medicine diagnostic criteria. We were unable to track down the diagnostic guidelines used by 1 study. The duration of intervention ranges between 2 weeks to 6 months. All studies did not mention follow-up procedures except for 1 study which reported a 6-month follow-up. The full summary of study characteristics is presented in Table 1.

Table 1. Characteristics of the included studies.

Author, Year	Average age (Years)		Average disease duration (Years)		Sample size			Gender distribution (M/F)	Intervention		Duration of intervention	Follow up
	EG	CG	EG	CG	Total	EG	CG		EG	CG		
Lee, 2018	54.51±6.22	53.56±6.29	6.81±1.35	6.52±1.41	100	50	50	54/46	AM + Tianma Gouteng Decoction	AM	4 weeks	No
Wang, 2008	56. 6±10.2	57. 4±9.57	4.63±2.07	4.51±1.97	70	36	34	35/35	MET+ Tianma Gouteng Decoction + Zhi Bai Dihuang Pills	MET	3 months	No
Gu, 2015	51.9±6.4	50.1±7.2	6.3±2.2	7.2±1.7	60	30	30	34/26	AM+ Modified Qiju Dihuang Decoction	AM	4 weeks	No
Wang & Huang, 2016	71.8±5.3	70.8±5.1	3.9±1.3	3.5±1.1	80	40	40	46/34	INN+ Modified Tianma Gouteng Decoction	INN	4 weeks	No
Chen, 2008	56·4±8·9	56·3±8·6	10·6±8·9	10·6±9·7	100	50	50	63/37	CPT + Tianma Gouteng Decoction	CPT	6 weeks	No
Zhang, 2010	55	56	NR	NR	105	55	50	66/39	NF+EN+ Qingnao Jiangya Decoction	NF+EN	4 weeks	No
Zeng & Yang, 2015	59.5±2.0	60.0±2.5	8.1±2.3	8.3±2.1	76	38	38	41/35	FE +NE + CPT + Self-created Decoction	FE+NE+CPT	30 days	No
Cai, 2006	59.2±4.21	57.1±5.13	7.85±2.63	8.12±2.56	86	43	43	48/38	FE + MET + Self-created Ziyin Pinggan Huoxue Decoction	FE+MET	28 days	No
Zhou, 2009	47.3±3.5	46.7±3.9	7.3±2.8	6.9±2.1	76	38	38	40/36	NF + Qige Tianma Gouteng Decoction	NF	12 weeks	No
Zhi & Yang, 2014	64.6±3.3	65.2±2.8	5.0±2.7	4.6±2.9	60	30	30	27/33	NT + CPT + Jiangya Decoction	NT+CPT	60 days	No
Zhou & Zhang, 2011	>60	>60	1 to 30	1 to 30	72	36	36	44/28	CPT + Modified Tianma Gouteng Decoction	CPT	4 weeks	No
Geng et al., 2011	52.5±3.5	52.2±3.6	4.2±1.6	4.0±1.5	140	70	70	91/49	EN + NT + Niuhuang Jiangya Capsule	EN+NT	4 weeks	No
Wei, 2013	48 to 79	50 to 81	1 to 7	2 to 9	45	23	22	25/20	NF + Jiangya Qingxin Decoction	NF	2 weeks	No
Ning, 2014	59.2±7.53	59.0±6.39	9.30±3.11	10.6±2.92	78	40	38	39/39	AM + Zhen Jian Granule	AM	28 days	No
Kong, 2013	53. 3±5. 0	52. 7±4. 8	8. 57±2. 46	8. 28±2.52	126	63	63	76/50	NF + Tianma Gouteng Decoction	NF	21 days	No
Yu, 2015	62.7±7.3	62.7±7.3	5.7±2.1	5.7±2.1	124	62	62	68/56	CTP + Tianma Gouteng Decoction	CPT	30 days	No
Ye, 2016	59.3±3.8	55.5±3.1	7.3±2.9	6.9±2.3	120	60	60	63/57	NF + EN + Huangjing Sicao Decoction	NF+EN	4 weeks	No
Zhu, 2017	55.4±8.9	56.3±8.6	10.6±9.7	10.7±8.9	100	50	50	60/40	CPT + Tianma Gouteng Decoction	CPT	6 weeks	No
Ji, 2007	32 to 65	30 to 64	0.25 to 20	0.25 to 22	60	30	30	38/22	Conventional drugs + TCM Decoction	Conventional drugs	2 weeks	No
Guo, 2008	62.7	61.3	5.6	5.6	75	41	34	40/35	NF + Pinggan Qianyang Decoction	NF	4 weeks	No
Zhang & Liu, 2008	38 to 78	40 to 76	8.1	7.6	86	43	43	45/41	CTP + TCM Decoction	CPT	8 weeks	No
Sun, 2014	42 to 64	40 to 62	NR	NR	96	48	48	61/35	Conventional drugs + Modified Tianma Gouteng Decoction	Conventional drugs	20 days	No
Fu, 2016	54.4±8.9	55.3±8.6	10.6±8.7	10.6±8.9	200	100	100	95/105	CTP + Tianma Gouteng Decoction	CPT	6 weeks	No
Zhang, 2017	62.5±9.15	61.8±8.62	NR	NR	80	40	40	56/24	AM + Tianma Gouteng Decoction	AM	4 weeks	No
Hu, 2014	58.8±5.0	56.8±6.0	10.6±5.2	9.9±6.3	60	30	30	35/25	FE + Tianma Yanggan Jiangzhi Decoction	FE	30 days	Yes, 6 months
Liu et al., 2014	58.4±6.5	57.3±6.3	8.2±3.1	7.6±2.7	127	63	64	74/53	CPT + Tianma Gouteng Granules	CPT	8 weeks	No
Yong Cheng Shi, 2012	52.4±3.5	52.3±3.6	4.1±1.6	4.0±1.5	70	35	35	46/24	EN + Jiangya Qingnao Decoction	EN	1 month	No
Song, 2016	62.8±9.6	63.2±9.8	8.6±4.2	8.7±4.3	72	36	36	42/30	AM + Modified Qiju Dihuang Pills	AM	4 weeks	No
Guo et al., 2011	57.1±12.1	58.1±11.2	5.03±1.67	4.95±1.71	60	30	30	40/20	BZ + Gouteng Jueming Decoction	BZ	8 weeks	No
Hua & Yang, 2016	54.4±2.67	53.3±3.07	NR	NR	166	83	83	86/80	EN + Tianma Gouteng Decoction	EN	4 weeks	No
Hou, 2011	56.2±9.38		7.62±3.28		70	35	35	42/28	AM + Pinggan Jiangya Decoction	AM	4 weeks	No
Wang et al., 2016	54.2±12.5	53.5±12.4	7.48±2.59	7.63±2.71	86	42	44	53/33	AM + Pinggan Qianyang Decoction	AM	6 months	No

Notes: NR = Not Reported, AM = Amlodipine, BZ = Benazepril, CPT = Captopril, EN = Enalapril, FE = Felodipine, MET = Metoprolol, NE = Nimodipine, NF = Nifedipine, NT = Nitrendipine

3.3 Methodological assessment – Risk of Bias

Overall, 8 studies were "low risk", 20 studies of "unclear risk" and 4 studies of "high risk" (Figure 2). Generally, the studies did not fare well under these criteria: Sequence generation, allocation concealment, blinding, and incomplete outcome data. 22 studies lack declaration on random sequence generation. All studies did not provide details for allocation concealment. In fact, only one study reported the use of double blinding (Zhang, 2017). 3 studies were labelled "high risk" due to incomplete outcome data. Only 1 study reported a 6 month follow up (Hu, 2014). No protocols were provided to investigate selective reporting. There were also no other sources of bias found except for 1 study (Lee, 2018).

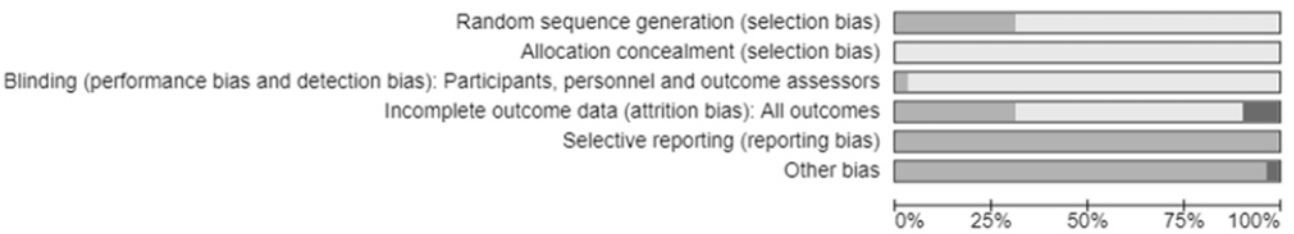
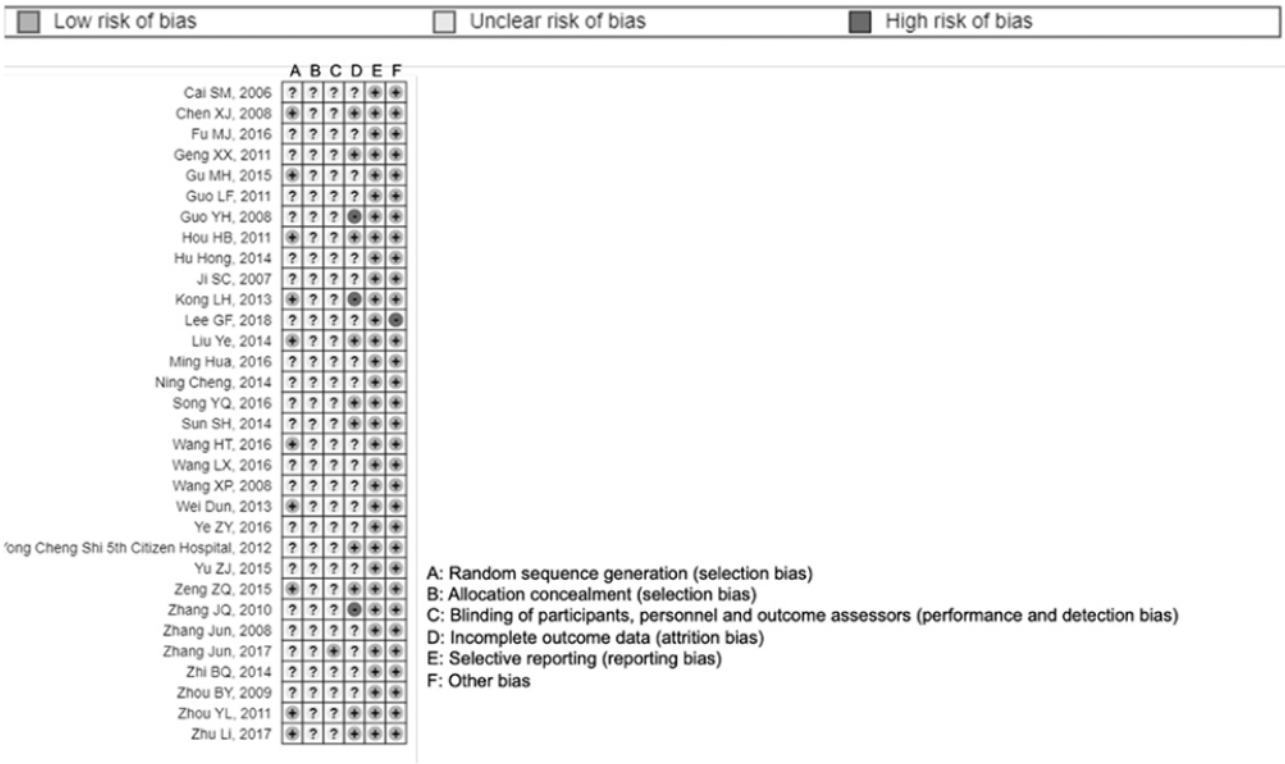


Figure 2. Risk of bias assessment summary of the 32 included studies



3.4 Meta-analysis

3.4.1 Overall efficacy

30 studies reported on overall efficacy with a total of 2794 participants. 1404 and 1390 patients make up EG and CG respectively. The heterogeneity was relatively high, I2=66%, hence we adopted the random-effect model for the meta-analysis. Overall, the data shows that EG displayed significantly higher therapeutic effects as compared to CG where only conventional drugs were used. [RR=1.15, 95% CI (1.10, 1.20), p<0.00001] (Figure 3).

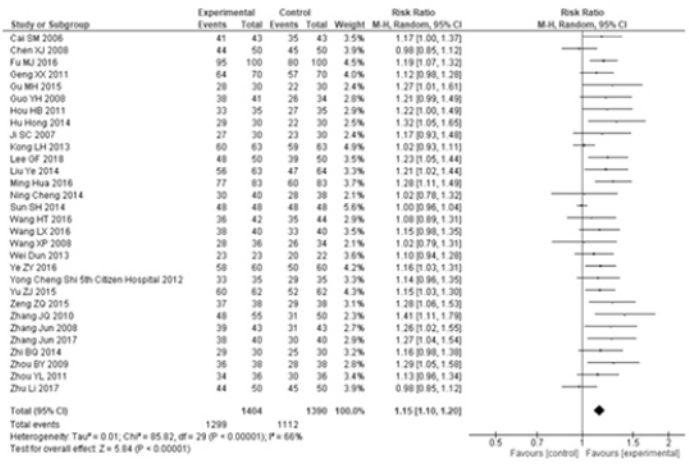


Figure 3. Forest plot for overall efficac

3.4.2 Endpoint systolic and diastolic blood pressure

20 studies reported on endpoint SBP and DBP readings which included 1735 patients, 871 patients in EG and 864 patients in CG. Both displayed high heterogeneity of I2=97% and I2=95% for SBP and DBP respectively. Hence, the random-effect model was used for the meta-analysis. In terms of endpoint SBP, the data shows that EG performed significantly better than CG. [MD= -10.96, 95% CI (-15.44, -6.47), p<0.00001] (Figure 4).

The endpoint DBP data also shows that EG performed significantly better than CG. [MD= -6.11, 95% CI (-8.18, -4.04), p<0.00001] (Figure 5).

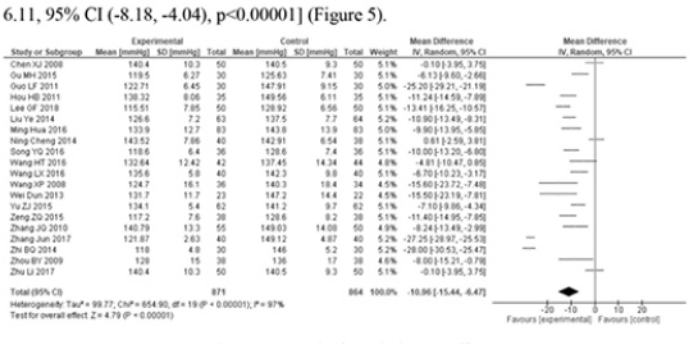


Figure 4. Forest plot for endpoint SBP efficacy

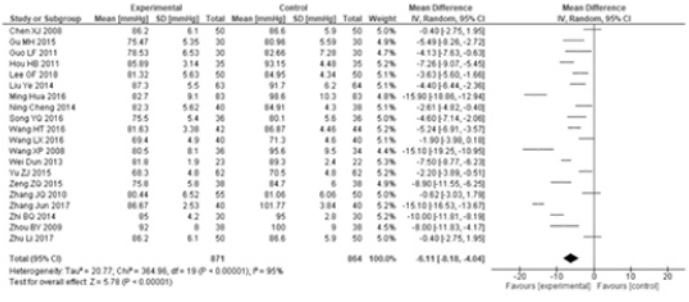


Figure 5. Forest plot for endpoint DBP efficacy

3.4.3 TCM-SSD score

12 studies reported TCM-SSD scores which included 1128 participants, with 566 patients in EG and 562 patients in CG. The heterogeneity was relatively low I2=33%, thus, the fixed-effect model was selected for analysis of results. EG performed significantly better than CG [RR= 1.26, 95% CI (1.20,1.33), p<0.00001] (Figure 6).

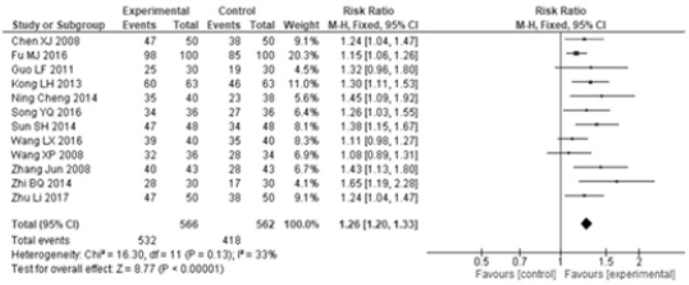


Figure 6. Forest plot for TCM-SSD score efficacy

3.5 Adverse Effects

Only 11 studies reported on adverse events (AEs) and 21 studies did not report on AEs. The common AEs experienced by these patients were cough (n=19), headache (n=7) and facial flush (n=7). No withdrawals were found in all studies.

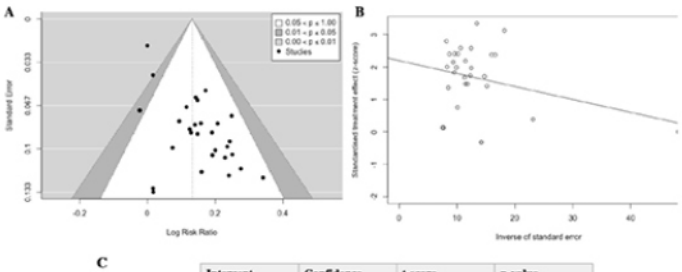
AEs were presented by 16 out of 1470 cases from EG, 24 out of 1456 cases from CG. A table including the studies and their respective AEs were generated as shown in Table 2.

Table 2. Summary of the reported AEs from the included studies

Author, Year	Integrative treatment (EG)		Conventional treatment (CG)		Details
	AEs	Total cases	AEs	Total cases	
Wang & Huang, 2016	0	40	0	40	
Chen, 2008	2	50	3	50	EG: 2 cases of dry cough CG: 3 cases of dry cough
Zeng & Yang, 2015	1	38	6	38	EG: 1 case of headache CG: 3 cases of headache, 2 cases of heart palpitations and insomnia, 1 case of vertigo There was a significant difference of AEs betwe the 2 groups. (p < 0.05)
Cai, 2006	0	43	0	43	
Zhou & Zhang, 2011	0	36	0	36	
Geng et al., 2011	0	70	0	70	
Zhu, 2017	2	50	3	50	EG: 2 cases of dry cough CG: 3 cases of dry cough
Sun, 2014	3	48	3	48	EG: 3 cases of cough CG: 3 cases of cough
Liu et al., 2014	6	63	5	64	EG: 2 cases of cough, 1 case of vertigo, 3 cases facial flush CG: 1 case of cough, 1 case of pharyngitis, 3 cas of facial flush There was no significant difference of AEs between the 2 groups. (p>0.05)
Yong Cheng Shi, 2012	0	35	0	35	
Hou, 2011	2	35	4	35	EG: 2 cases of stomach discomfort CG: 3 cases of headache, 1 case of facial flush

3.6 Sensitivity Analysis – Publication Bias

From the inverted funnel plot in figure 7A, we found that the included studies were on both sides of the dotted line and the plot was skewed, showing funnel asymmetry. Using standard errors of the studies as the predictor, the Egger's test quantified the funnel asymmetry in figure 7B and 7C, with a y-intercept of 2.1977, suggesting presence of significant publication bias ($p < 0.0001$). Overall, the included studies mostly reported only the advantages and effectiveness of integrative treatment against conventional treatment. Researchers may have given more attention to the positive results and less on any negative results, leaving negative results unpublished.



C

	Intercept	Confidence interval	t-score	p-value
Egger's test	2.1977	[1.4789, 2.9165]	5.9924	p = 1.8679e-06 (p < 0.0001)

Figure 7. (A) Funnel plot depicting funnel asymmetry in the meta-analysis of the efficacy of integrative medicine in primary hypertension, based on risk ratios of the overall efficacy in RCTs (n=30). (B) Egger's publication bias plot with a linear regression model intercept of 2.1977, suggesting significant publication bias. (C) Egger's test statistics with $p < 0.0001$, showing significant funnel asymmetry.

3.7 Core Herbal Analysis

We identified a total of 70 herbs from the 32 RCTs in the integrative treatment of essential hypertension. Figure 8 shows the top 20 most frequently used herbs out of the 70 herbs. The top 10 herbs with above 0.4 relative frequency were Achyranthes bidentata (Niuxi) , Uncaria rhynchophylla (Gouteng) , Gastrodia elata (Tianma) , Eucommia ulmoides (Duzhong) , Taxillus chinensis (Sangjisheng) , Haliotidis Concha (Shijueming) , Poria cocos (Fushen) , Scutellaria baicalensis (Huangqin) , Fallopia multiflora (Yejiaoteng) , Gardenia jasminoides (Zhizi) .

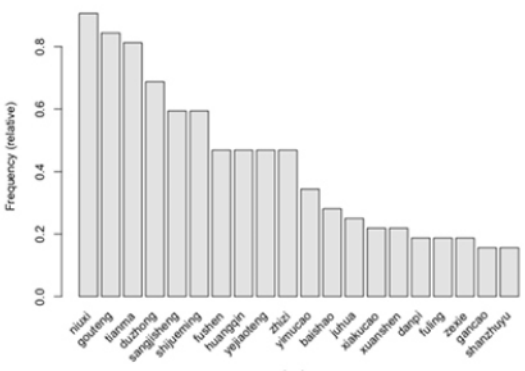


Figure 8. Relative item frequency plot for the distribution of herbs used in the included studies.

With a support degree of 60% and confidence level of 95%, we have derived a total of 11 association rules from the herbal formulas used in the 32 RCTs for essential hypertension shown in Table 3. The results showed that the lift value of the 11 rules range from 1.10 to 1.19, all being larger than 1. Hence, the likelihood of the antecedent (Left-hand side, LHS) and consequent (Right-hand side, RHS) herbs being selected in the same formula was significantly larger than that of the consequent (RHS) herb being selected alone. The confidence level of all 11 rules were also above 95%. Hence, for each rule, the likelihood of the consequent (RHS) herb being selected when the antecedent (LHS) herb is selected is relatively high. The support levels of all 11 rules ranges from 62% to 84%, indicating that the frequency of each antecedent (LHS) herb appearing in the formula is 62% to 84%. These three parameters suggest the possible presence of a core herbal combination for the treatment of essential hypertension.

Table 3. Summary of the 11 association rules.

	Herb 1 (LHS)	Herb 2 (RHS)	Support	Confidence	Lift
[1]	duzhong	gouteng	0.68750	1.00000	1.18519
[2]	duzhong	niuxi	0.68750	1.00000	1.10345
[3]	tianma	gouteng	0.78125	0.96154	1.13960
[4]	tianma	niuxi	0.81250	1.00000	1.10345
[5]	gouteng	niuxi	0.84375	1.00000	1.10345
[6]	duzhong, tianma	gouteng	0.62500	1.00000	1.18519
[7]	duzhong, tianma	niuxi	0.62500	1.00000	1.10345
[8]	duzhong, gouteng	niuxi	0.68750	1.00000	1.10345
[9]	duzhong, niuxi	gouteng	0.68750	1.00000	1.18519
[10]	gouteng, tianma	niuxi	0.78125	1.00000	1.10345
[11]	niuxi, tianma	gouteng	0.78126	0.96154	1.13960

Figure 9. Core herbal network prescription from apriori-association algorithm. (The coloured circles represent the association rules while the preceding and consequent arrows represent the LHS and RHS respectively. The strength (lift) of the relationships is expressed as the colour depth of the circles and the support is represented by the size of the circles.)

The core herbal network prescription consists of the top 4 most frequently used herbs: Niuxi, Tianma, Gouteng and Duzhong. From the TCM perspective, both Niuxi and Duzhong can nourish the liver and kidney, as well as strengthen the bone and muscles. Niuxi can also prevent blood stasis by promoting blood flow and unblocking channels, causing blood to flow downwards. Both Tianma and Gouteng can calm the liver and extinguish wind to arrest convulsions. An interesting point was that all 4 herbs enter the liver channel, which addresses the hyperactivity of liver yang and emphasizes the correlation with vertigo and headache which are often believed to be the result of "wind" from the TCM perspective.

4. DISCUSSION

The integrative treatment group which combined antihypertensive drugs with TCM treatment has a superior effect on lowering blood pressures and alleviating symptoms when compared to the conventional treatment group. Outcome measures including the overall efficacy, endpoint SBP, endpoint DBP, and TCM-SSD scores revealed statistically significant improvements in the integrative treatment group. Hence, we suggest that the complementation of TCM with modern medicine could help patients with essential hypertension further reduce the blood pressure and improve quality of life. It was also noteworthy that fewer adverse effects were experienced by the patients in the integrative treatment group compared to conventional treatment group. This might possibly suggest that the addition of TCM treatment can help to limit the adverse reactions caused by conventional drugs. However, only 11 of the 32 studies reported on the incidence of AEs and it would be unwise to conclude the safety of integrative treatment at this stage.

To critically assess the credibility of results provided by these included RCTs, heterogeneity, risk of bias and publication bias were being evaluated. Generally high heterogeneity ($I2 > 50\%$), funnel plot asymmetry and unclear methodological quality of the included studies render a weak justification of the overall efficacy of the integrative treatment.

Additionally, we have also characterised the top 20 frequently used herbs in the treatment of essential hypertension and elucidated the core herbal network to be Niuxi, Tianma, Gouteng, and Duzhong. Upon examination of current literature, Gouteng was found to act like a calcium channel blocker (Ndagijimana et al., 2013) due to the action of indole alkaloids such as rhynchophylline and

isorhychophylline. These alkaloids can block the release of calcium from intracellular stores, thereby providing antihypertensive effects (Maione et al., 2013). On the other hand, Gastrodia isolated from Tianma was found to interfere with the renin angiotensin aldosterone system (RAAS) by reducing the concentration of angiotensin II, aldosterone and AT1R plasma membrane receptor. This reduction subsequently prevents episodes of vasoconstriction. Activation of peroxisome proliferator-activated receptor with Gastrodia also inhibited the expression of angiotensin II and aldosterone (Liu et al., 2015). Duzhong was also reported to elicit an inhibitory effect on the RAAS and cause an increase in plasma nitric oxide levels (a strong vasodilator), thereby producing a hypotensive effect (Luo et al., 2010). Despite Niuxi being the most frequently used herb and is known for its antihypertensive effect, its specific antihypertensive pathway is still largely unknown. These pharmacological properties and mechanisms of action can perhaps justify the antihypertensive effects of the 4 herbs in our core network, and hence, warranting the use of integrative treatment in essential hypertension.

Despite the useful insights from the association-mining analysis, it is important to note that the apriori-association algorithm places more emphasis on frequent itemsets and neglects non-frequent itemsets which can also possibly provide more utility in real-time scenarios. In retrospect, we could have explored the usage of the Novel Utility Frequent Apriori algorithm which places equal weight on both frequent and non-frequent itemsets (Vivekanandan & Gunasekaran, 2022).

A notable strength of this study is that we employed the combination of methods: a systematic search strategy and data mining to perform a comprehensive exploratory analysis of the herbal combinations for essential hypertension. This study revealed major herbal core combinations in the treatment of essential hypertension by implementing the apriori association-mining analysis. The advantage of using herbal formulas from RCTs to perform association-mining analysis is the reduced noise level of the data as individual patient data from TCM records is rather inconsistent and poorly recorded. This particular methodology of using RCTs in data mining is rather novel in the field of TCM and it was only used in the recent years. Various studies in peer-reviewed journals employed a similar approach to elucidate core herbal combinations in the treatment of non-small cell lung cancer, primary hepatocellular carcinoma, chronic kidney disease treatment, and diabetic gastroparesis (Lu et al., 2021; Qi et al., 2021; Y. Wang et al., 2018; Xia et al., 2020). This core herbal network is valuable as it can pave the way for future research to shed more light on the efficacies and specific mechanism of action of the four core herbs.

5. CONCLUSION

Our study evaluated the efficacy of integrating Chinese and modern medicine in the management of essential hypertension. The results from our meta-analysis have revealed that the integrative intervention group has a higher overall efficacy when compared to the conventional treatment group [RR = 1.15, 95% CI (1.10, 1.20), $p<0.00001$]. Outcome measures including endpoint blood pressures and TCM syndrome score were more favourable in the integrative treatment group as well. The core herbal network for essential hypertension was also elucidated in our study.

In closing, we tentatively conclude that TCM treatment might be an effective complement with modern medicine to lower blood pressure and alleviate symptoms in patients with essential hypertension. Nonetheless, more well-designed, and long-term clinical trials are required to further justify its use. We are positive that the integration of Chinese and modern medicine in both the diagnosis and treatment of essential hypertension has the potential to establish a novel treatment regime which is both efficacious and safe for the patients.

【References】Omitted

浅析房定亚教授四妙消痹汤治疗类风湿性关节炎

王思諭[1]、郭素安[1]、申任远[1]、房定亚[2]
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类风湿性关节炎（Rheumatoid Arthritis, RA）是一种以致残性多关节滑膜炎为特征的慢性系统性自身免疫疾病，临床主要表现为慢性、对称性、破坏性多关节炎，常累及双手、腕、膝、踝和足等关节[1,2]。其病理基础为滑膜炎性增生，继而破坏软骨和骨组织，导致关节结构的永久性损害。发病机制复杂，涉及遗传易感性、环境因素、感染及免疫异常等多重作用，其中T细胞激活、炎性细胞因子释放、滑膜血管翳形成以及TNF-α、IL-1、IL-6等的异常表达在病程进展中起关键作用[1,2]。

临床上，RA患者早期常以关节红、肿、热、痛和晨僵为主要表现，常对称性累及掌指关节、近端指间关节、腕关节、膝关节、踝关节及跖趾关节，晨僵持续时间多超过1小时。随着病程进展，可出现“纽扣花样畸形”、“天鹅颈畸形”以及腕关节背侧半脱位等典型畸形，严重影响关节功能与生活质量。部分患者在关节伸侧皮下形成类风湿结节，属于RA的特征性表现之一。RA还可波及多个系统，如肺间质病变、心包炎、胸膜炎、巩膜炎及血管炎等，显著增加致残风险[1-3]。

实验室检查方面，RA患者常表现为类风湿因子（RF）、抗环瓜氨酸肽抗体（anti-CCP）或抗核抗体（ANA）阳性，同时C反应蛋白（CRP）和红细胞沉降率（ESR）升高，提示存在较高的炎症活动性[1,4]。目前RA的诊断主要依据2010年ACR/EULAR分类标准[5]，通过临床表现、血清学指标、影像学检查和炎症水平等多个维度综合评估，而非依赖某一单一检查结果。这种综合判断虽提高了诊断准确性，但在疾病早期，尤其在症状隐匿或非典型表现的患者中，仍存在误诊或漏诊的可能，导致治疗延误。实际疾病负担可能远高于文献报道，亟需提升早期识别率与干预能力。

流行病学数据显示，RA全球患病率约为0.5% – 1.0%，女性高于男性，发病高峰为30 – 50岁[6,7]。据全球疾病负担（Global Burden of Disease, GBD）研究，2020年RA导致超过306万伤残调整生命年，居慢性致残性疾病前列[8,9]。若缺乏有效干预，约60%的患者在10年内出现不同程度的关节畸形或残疾，30%的患者在5年内丧失劳动能力。因此，RA的早期诊断与规范治疗对改善患者预后至关重要。本文将结合西医治疗现状与中医辨证思路，探讨房定亚教授基于“毒热伤络”理论创制的“四妙消痹汤”在湿热毒蕴型RA急性期的临床应用与研究进展。

一、西医对类风湿性关节炎的认识与治疗现状

现代医学将RA视为由免疫失调引发的全身性慢性炎症性疾病，病变始于关节滑膜，滑膜细胞在炎症因子刺激下异常增生，形成“类肿瘤性滑膜组织”（pannus），侵蚀软骨与骨组织，导致关节破坏。遗传因素如HLA-DR4、“共享表位”与RA密切相关，环境因素如吸烟、牙周病、EB病毒感染等可诱导抗瓜氨酸抗体产生，引发T细胞、B细胞及巨噬细胞参与的炎症反应[1,4,5]。

西医治疗强调“Treat to Target”（T2T）策略，目标为达成疾病缓解或低活动度[8,10]。常用药物包括：①非甾体抗炎药（NSAIDs），缓解疼痛与炎症，但不阻止病程进展[11]；②糖皮质激素，短期快速控炎，但长期可致骨质疏松、代谢紊乱等副作用；③传统合成抗风湿药（csDMARDs），如甲氨蝶呤、柳氮磺吡啶、羟氯喹，为基础治疗药物，但起效慢且部分患者应答不足；④生物制剂（bDMARDs），如抗TNF-α抗体、IL-6受体拮抗剂、B细胞靶向治疗，可显著抑炎延缓骨破坏，但费用高且存在感染风险；⑤靶向合成抗风湿药（tsDMARDs），如JAK抑制剂，口服便捷、起效快，但存在肝功能异常及血栓风险。

尽管多线治疗体系逐渐完善，仍面临疗效个体差异、副作用及经济负担等问题[12,13]。因此，中西医结合治疗在RA长期管理中的应用价值日益凸显。

二、中医对类风湿性关节炎的病机认识

RA在中医学中多属“痹证”范畴，亦有称“历节病”者，历代医籍均有记载。《黄帝内经 · 素问 · 痹论》早在两千多年前便提出“风、寒、湿三气杂至，合而为痹”，并根据致病之气偏胜分为行痹、痛痹、着痹，为后世辨证奠定了基础[14]。《金匮要略 · 中风历节病脉证并治》所载“历节不可屈伸，疼痛……身体髀股、膝、足、节皆痛”[15]，与RA多关节对称性受累、活动受限的特征相符。至金元时期，张从正提出“痹病以湿热为源，风寒为兼”，吴鞠通亦论“宜痹汤治湿热痹”，均强调湿热在痹证发病中的重要作用。

从中医病机演变来看，RA多由正气亏虚，卫外不固，感受风、寒、湿、热等外邪而起。外邪初侵，病位在肌肤筋骨之间，气血运行受阻，关节疼痛、肿胀、活动不利；若邪气郁久化热，热盛则易灼伤营血，进一步导致瘀血阻络。病程迁延日久，正气渐损，肝肾亏虚，筋骨失养，疼痛、僵硬及关节变形加重。临证常见邪实与正虚交织，寒热错杂，痰瘀互结，致使病情缠绵反复、难以速愈。

综上，中医对RA的病机认识可概括为：早期以外邪闭阻、气血不畅为主，病性多实；中晚期正虚渐显，

肝肾亏虚、气血两伤为本，夹杂瘀血、痰湿等病理产物，呈现虚实夹杂、寒热互见的特点。这一认识为后续的辨证施治奠定了理论基础，并为结合现代医学观点探讨RA的治疗提供了思路。

三、房定亚教授“毒热伤络”理论与辨证思维

房定亚教授（尊称“房老”），首都国医名师、中国中医科学院西苑医院风湿免疫学科带头人，新加坡同济医院医药顾问，自1978年起投身于风湿免疫性疾病的中医临床与科研工作，治学严谨、经验丰富，是将风湿、肾脏及心血管等疑难病系统纳入中医治疗体系的重要奠基者之一，其学术思想与临床成果深受海内外学界推崇。在多年的临床实践中，房老针对RA“毒热伤络”的病机特征，提出应“治痹先治毒，以清热解毒通络护脉为本”，并据此创制了“四妙消痹汤”。该方以传统四妙勇安汤为基础，结合自身多年诊疗经验，辨证加减组成，尤其适用于RA急性活动期，临床疗效显著，广为后学效法。

3.1 房定亚教授对RA病机的独到见解：“毒热伤络”理论

在继承前人理论基础上，房老对RA的病机提出了“内毒致痹，毒热伤络”的学术观点[16,17]。他指出，RA的实质在于内生毒热之邪灼伤经络、血脉，形成红肿热痛、关节活动障碍等典型表现。此病初起虽可因外感风寒湿热，但根源在于机体免疫失衡，导致“内毒”壅滞，“热毒”泛滥，病邪从表入里，深入血络，灼伤筋骨关节。

房老强调，RA急性发作期的关节红肿灼热、口干咽痛、皮疹结节、身热烦躁等症状，正是“热极生毒”的表现，应首重清热解毒、凉血散结、通络活血。他指出，传统“祛风散寒除湿”法虽适用于寒湿痹阻者，但对湿热毒盛型疗效不彰，必须更新治疗思路，顺应病机变化，首清热毒，再图调理。

“毒热伤络”理论不仅切合中医经典辨证原则，更与现代医学中“免疫介导性血管炎”、“滑膜炎症细胞因子风暴”等病理概念相互印证，为RA的辨证治疗提供了新的理论框架与实践方向[17]。

3.2 方源分析：从四妙勇安汤化裁而来

四妙勇安汤最早见于华佗《神医秘传》，原载用于治疗手指或足趾末端发疹、继而疼痛、甲色变黑、久则溃烂坏疽、节节脱落之疾，其组方为金银花三两、玄参一两、当归二两、生甘草一两，水煎服用。清代医家鲍相墩将其命名为“四妙勇安汤”，并收录于《验方新编》中，称其治疗脱疽“一连十剂，永无后患”，强调药味分量不可减，否则疗效下降。原方以金银花、玄参为君，前者清热解毒、能清气分热邪并解血分毒邪，后者滋阴凉血、解毒散结，二者相配可实现内外兼治、解毒通络之效；当归本能养血活血亦为和活血行瘀之要药，用以治病之标；生甘草配金银花增强清热解毒力，同时调和诸药。全方清养并用、祛毒祛瘀兼施，药量充足，力量专一，原为治疗脱疽的专方，后多用于血栓闭塞性脉管炎。

房老在长期临床实践中指出，自身免疫性疾病的基本病理改变之一即为血管炎，而四妙勇安汤能够改善血液循环、促进代谢，且兼具清热解毒与活血通络之功，故其适应证不仅限于外科坏疽、脉管炎，还可推广至多种风湿免疫性疾病[18]。现代药理研究亦证实，该方具有调节免疫、抗炎镇痛、抑菌解毒、改善微循环等多重作用，为其在风湿病治疗中的广泛应用提供了实验依据[19,20]。

在辨证施治中，房老基于风湿病“自身免疫异常性血管炎”这一病理特征，将其对应于中医“毒热伤络”的核心证机，确立了“解毒通络护脉”的基本治法，并以四妙勇安汤为核心方，灵活加减应用于多种风湿性疾病[16-19]。

在RA的治疗中，房老尤其强调其急性活动期多表现为关节红肿热痛、灼热难忍，或伴口腔溃疡、皮下结节、红斑、咽干、便秘、小便黄赤、发热等，皆属“热毒瘀”内盛之象。此时以四妙勇安汤为基础，重用清热解毒之品，佐以活血止痛、祛风除湿之药，标本兼顾，契合病机，能有效缓解炎症反应并控制病程进展。由此，房老在四妙勇安汤的基础上化裁创制出“四妙消痹汤”，专治湿热毒蕴型RA急性发作期，使原方的清热解毒、活血通络之功更契合RA的病理机制与临床表现[20]。

3.3 四妙消痹汤组成与配伍分析

四妙消痹汤由金银花、玄参、白花蛇舌草、山慈菇、青风藤、蜈蚣、当归、生地黄、白芍、鹿衔草、生甘草组成。

方中金银花、玄参为核心君药，共奏清热透邪、凉血散结之功。金银花能外散风热、解表透邪，玄参直入营血、清热凉血养阴，其味咸性寒，功能泻火解毒、软坚散结，二者合用，外解内清，标本兼顾。白花蛇舌草、山慈菇均为性寒清热之品，善解毒、消痈、祛湿，为清除关节局部热毒之关键药物，协助君药加强消痹化毒之力。青风藤善祛风湿、通经络，现代药理研究表明其具有免疫抑制及抗滑膜炎作用；蜈蚣则善走窜、通络散结，对顽固性风湿痹痛疗效显著，二者合用可直达病灶，解除经脉痹阻、止痛解痉。当归、生地、白芍三药同用，着眼于RA久病耗血伤阴之弊，一方面养血滋阴、防止热毒进一步灼伤营阴，另一方面缓解筋脉拘急，增强治疗的持久性与协调性。鹿衔草祛风湿兼补肝肾、强筋骨，为本虚标实之良药，兼具“治本”之义。生甘草则缓和诸药峻烈之性，同时具清热解毒、止痛和中之功，使全方配伍协调、攻补兼施。

整体而言，该方以清热解毒为纲，辅以通络止痛、养血益阴、强筋健骨，体现了房老急性期“先祛其邪、后顾其正”的核心思路[16,19,20]。

3.4 治法特色总结

房老临证用药强调“以法立方”，认为RA的核心病机为“内毒致痹，毒热伤络”，贯穿疾病始终。其治疗主旨是以清热解毒、通络护脉为纲，根据病程阶段灵活调整，辨证施治[16-18]。

在疾病的急性活动期，炎症反应剧烈，关节多表现为红、肿、热、痛，常伴发热、口干、口疮、皮下结节、红斑等症，病机属湿热毒盛、灼伤血络。房老主张此期应及早应用清热解毒、除湿通络、活血化瘀之法，阻断病邪入络伤脉，防止病情迁延或关节不可逆损伤。常以“四妙消痹汤”为核心方，配伍白花蛇舌草、山慈菇、青风藤、蜈蚣等药，以增强清热解毒、通络止痛之效，体现“先祛其邪”的原则。

当疾病进入缓解期或迁延期，患者多表现为免疫功能低下、肝脾肾亏虚，房老则转以调补肝肾、益气养阴、健脾扶正为主，同时酌加清热解毒、活血通络之品，以防病邪残留、瘀毒留络。此举既可改善机体功能状态，又可减少复发风险，体现"扶正祛邪并举"的思想。

总体而言，房老在治疗RA中始终将"清热解毒、通络护脉"作为核心治则，强调在不同阶段采取有针对性的施治策略：急性期重在清解湿热毒邪，缓解期注重调补与祛邪并行。此法既能应对RA急性活动期的炎症风暴，又可兼顾慢性期的体虚本质，疗效显著且安全性高，充分体现了房老辨证精准、灵活运用经典方药的学术特色。

四、现代药理机制与临床实证研究

现代药理学与网络药理学研究为四妙消痹汤治疗RA提供了重要的机制学支撑[22]。基于中药成分数据库（TCMSP）与疾病靶点数据库（GeneCards、OMIM、-PharmGKB、TTD及DrugBank）的整合分析发现，四妙消痹汤含有190余种活性成分，涉及215个潜在作用靶点，这些靶点在免疫调节、炎症反应及关节保护等多条信号通路中发挥重要作用。具体而言，该方可通过抑制TLR4/NF-κB信号通路，降低TNF-α、IL-1β、IL-6等炎症因子的释放，减轻滑膜细胞的炎症反应与血管翳形成；通过调节MAPK信号通路，抑制成纤维样滑膜细胞（FLS）的异常增殖和血管新生；并可影响PI3K-Akt信号通路，改善细胞代谢与凋亡失衡。此外，研究显示四妙消痹汤能够调节Th17/Treg细胞比例，恢复免疫耐受，抑制自身免疫反应的过度活化，这与房老"解毒通络护脉"理论中的"护脉"环节高度契合。

动物模型实验进一步验证了四妙消痹汤的多靶点作用特征[23-26]。在胶原诱导性关节炎（CIA）大鼠模型中，给予四妙消痹汤干预可显著降低关节肿胀指数，减轻滑膜组织炎性细胞浸润与血管翳形成，抑制软骨破坏及骨质侵蚀。血清检测结果显示，TNF-α、IL-6、IL-1β等炎症因子水平明显下降，而外周血Treg细胞比例上升，提示机体免疫耐受能力增强。组织学切片证实，该方能延缓关节结构损伤并保护软骨表面平整性，说明其不仅具有直接抗炎作用，还可通过免疫调节与组织保护双重机制发挥疗效。这些结果从实验层面印证了四妙消痹汤在抗炎、免疫调控和关节保护方面的综合优势，为其临床应用提供了可靠的前期数据支持。

在临床层面，周彩云等人开展了一项前瞻性随机对照研究[20]，对比了四妙消痹汤联合常规西药与单用西药治疗RA急性活动期的疗效与安全性。研究纳入120例湿热毒蕴型RA患者，随机分为试验组与对照组，观察周期为12周。结果显示，试验组的疾病活动评分（DAS28）由基线的（4.75±1.11）显著下降至（3.45±1.11），改善幅度明显优于对照组的（4.01±1.06）；炎症指标方面，C反应蛋白（CRP）和红细胞沉降率（ESR）均较基线大幅下降，且试验组下降幅度更为显著。症状改善方面，试验组患者的疼痛视觉模拟评分（VAS）与健康评估问卷（HAQ）功能评分均较对照组有更显著的下降，关节肿胀范围缩小，晨僵时间明显缩短。安全性方面，试验组不良反应发生率仅为6.7%，主要为轻度胃肠道不适，无严重肝肾功能损害；相比之下，对照组的不良反应发生率高达43.3%。

这些临床结果提示，四妙消痹汤在RA急性活动期不仅能够显著降低疾病活动度、改善关节功能与生活质量，还具备起效迅速、疗效稳定、副作用轻微的优势，尤其适合湿热毒蕴、关节红肿热痛为主要表现的患者群体。结合现代药理研究与动物实验数据，可以看出四妙消痹汤在RA治疗中呈现出"多通路、多靶点、双向调节"的综合优势，充分体现了中医药"祛邪不伤正、标本同治"的治疗理念。

五、典型病例

刘某，女，46岁。因反复双手小关节肿痛1年余就诊。1年来患者多次出现双手第2、3近端指间关节及掌指关节明显肿痛，屈伸不利，局部皮肤发热，晨僵时间>1小时，双手握力明显下降，伴纳差、便干、夜寐欠佳。查舌红、苔薄黄，脉滑数。中医诊断为"痹证"，辨证属湿热毒蕴型。

既往曾服独活寄生汤、乌头汤等方剂治疗，疗效欠佳。房老据患者湿热毒盛、热毒伤络之病机，拟以"四妙消痹汤"加减，方药组成：金银花20g，玄参20g，白芍20g，当归20g，生甘草10g，青风藤20g，络石藤20g，稀莶草30g，山慈菇9g，虎杖15g，白花蛇舌草30g，蜈蚣2条。14剂后患者关节肿胀明显消退，局部皮温降低。继因乏力明显、汗出较多，去防己、稀莶草，加生黄芪30g、仙鹤草20g，再服14剂，关节疼痛明显缓解，双手握力接近正常。

【按语】本例RA患者，中医诊断为"痹证"，既往求诊医师均依循"风寒湿痹"传统思路，先后以独活寄生汤、乌头汤等方剂治疗均未获效。房老首次诊治时详细辨病辨证，认为患者虽属痹证范畴，但临床以双手小关节红肿热痛、局部皮肤灼热、舌红苔黄、脉滑数为主要特征，兼有纳差、便干等热象，病机核心为湿热毒蕴、毒热伤络。基于此，房老选用"四妙勇安汤"化裁"四妙消痹汤"，以清热解毒、活血通络为主，辅以祛风除湿、养血柔筋之品，直指病机。用药14剂即显效，关节肿胀明显消退，局部热象缓解，继加益气固表药以善后，巩固疗效。此案充分体现了房老"有是病即用专方"的治疗理念，以及在辨病基础上突出辨证、精准用方、顺应病机的临床思路。

六、结语

类风湿性关节炎是一种病因复杂、进程缓慢且致残率高的慢性自身免疫性疾病，既往西医虽已形成包括csDMARDs、生物制剂及JAK抑制剂在内的多线治疗体系，但疗效仍受个体差异、副作用及经济负担限制。房定亚教授基于"自身免疫异常性血管炎"的病理特征，提出"毒热伤络"核心病机，并创制"四妙消痹汤"以清热解毒、通络护脉，辅以养血活血、祛湿止痛，形成系统化辨证治疗模式。现代药理学、动物实验及临床研究均证实该方可通过多靶点、多通路实现抗炎、免疫调节与关节保护，且安全性良好，疗效稳定。四妙消痹汤的应用不仅体现了中医辨证与现代医学机制融合的优势，也为

湿热毒蕴型RA的中西医结合治疗提供了循证支持，显示出广阔的临床推广与研究价值。

【参考文献】

1. Smolen, J. S., Aletaha, D., & McInnes, I. B. (2016). Rheumatoid arthritis. The Lancet, 388(10055), 2023 – 2038.
2. 中华医学会风湿病学分会. (2010). 类风湿关节炎诊断及治疗指南. 中华风湿病学杂志, (04), 265 – 270.
3. 王吉耀主编. (2005). 内科学（八年制） [教材]. 人民卫生出版社.
4. Gravallese, E. M., & Firestein, G. S. (2023). Rheumatoid arthritis—Common origins, divergent mechanisms. The New England Journal of Medicine, 388, 529 – 542.
5. Aletaha, D., Neogi, T., Silman, A. J., Funovits, et al. (2010). 2010 Rheumatoid arthritis classification criteria: an American College of Rheumatology/ European League Against Rheumatism collaborative initiative. Annals of the Rheumatic Diseases, 69(9), 1580 – 1588.
6. Abhishek, A., Doherty, M., Kuo, C. F., Mallen, C. D., Zhang, W., & Grainge, M. J. (2017). Rheumatoid arthritis is getting less frequent—Results of a nationwide population-based cohort study. Rheumatology (Oxford), 56(5), 736 – 744.
7. Almutairi, K., Nossent, J., Preen, D., Keen, H., & Inderjeeth, C. (2021). The global prevalence of rheumatoid arthritis: A meta-analysis based on a systematic review. Rheumatology International, 41, 863 – 877.
8. GBD 2019 Diseases and Injuries Collaborators. (2020). Global burden of 369 diseases and injuries in 204 countries and territories, 1990 – 2019: A systematic analysis for the Global Burden of Disease Study 2019. The Lancet, 396(10258), 1204 – 1222.
9. GBD 2021 Rheumatoid Arthritis Collaborators. (2023). Global, regional, and national burden of rheumatoid arthritis, 1990 – 2020, and projections to 2050: A systematic analysis of the Global Burden of Disease Study 2021. The Lancet Rheumatology, 5, e594 – e610.
10. Smolen, J. S., Landewé, R. B. M., Bergstra, S. A., Kerschbaumer, et al. (2023). EULAR recommendations for the management of rheumatoid arthritis with synthetic and biological disease-modifying antirheumatic drugs: 2022 update. Annals of the Rheumatic Diseases, 82(1), 3 – 18.
11. van der Kooij, S. M., de Vries-Bouwstra, J. K., Goekoop-Ruiterman, Y. P. M., van Zeben, D., Kerstens, P. J. S. M., Gerards, A. H., et al. (2007). Limited efficacy of conventional DMARDs after initial methotrexate failure in patients with recent-onset rheumatoid arthritis treated according to the disease activity score. Annals of the Rheumatic Diseases, 66, 1356 – 1362.
12. Emery, P., Breedveld, F. C., Hall, S., Durez, P., Chang, D. J., Robertson, D., et al. (2008). Comparison of methotrexate monotherapy with a combination of methotrexate and etanercept in active, early, moderate to severe rheumatoid arthritis (COMET): A randomized, double-blind, parallel treatment trial. The Lancet, 372(9636), 375 – 382.
13. van Vollenhoven, R. F., Ernestam, S., Geborek, P., Petersson, I. F., Cöster, L., Waltbrand, E., et al. (2009). Addition of infliximab compared with addition of sulfasalazine and hydroxychloroquine to methotrexate in patients with early rheumatoid arthritis (Swefot trial): 1-year results of a randomized trial. The Lancet, 374(9688), 459 – 466.
14. 黄帝内经编委会. (2009). 黄帝内经 · 素问. 北京：人民卫生出版社.
15. 张仲景. (东汉). 金匮要略. 中医古籍整理出版.
16. 周彩云. (2012). 房定亚治疗风湿病传真 [专著]. 北京科学技术出版社.
17. 周彩云, 唐今扬, 马芳, 李斌, 王鑫, 潘峥. (2013). 房定亚临证经验、学术思想荟萃 [Z]. SNAD.
18. 唐今扬，周彩云，马芳，&房定亚. (2017).房定亚“病证结合、专方专药”学术理论与实践.辽宁中医杂志, (08), 1589 – 1593.
19. 周彩云，唐今扬.(2010).房定亚治疗类风湿关节炎经验.In《中国中医风湿病学杂志》编辑部(Eds.), 中华中医药学会风湿病分会2010年学术会论文集 (pp. 397 – 399). 中国中医风湿病学杂志社.
20. 周彩云, 唐今扬, 房定亚, 潘峥, &马芳. (2010). 四妙消痹汤治疗类风湿关节炎活动期临床研究. 中国中西医结合杂志, (03), 275 – 279.
21. 王鑫, 马芳, 周彩云, &唐今扬. (2022). 房定亚教授中西医结合治疗类风湿关节炎临证经验. 中国中西医结合杂志, (09), 1140 – 1142.
22. 许博, 马俊福, 郑福增, &赵晶晶. (2022). 基于网络药理学和分子对接技术探讨四妙消痹汤治疗类风湿关节炎的作用机制. 中医学报, (11), 2426 – 2433.
23. 高志, 吴傲, 胡仲翔, 孙培养. 类风湿性关节炎中氧化应激与免疫浸润的生物信息学分析[J].南方医科大学学报, 2025, 45(4): 862-870.
24. 唐今扬，周彩云，王鑫，马芳，潘峥，韩淑花...&房定亚.(2022).金藤清痹颗粒通过调节免疫微环境对类风湿关节炎大鼠的干预作用.中成药(11),3459-3468.
25. 唐今扬，周彩云，王鑫，马芳，潘峥，韩淑花...&房定亚.(2022).金藤清痹颗粒治疗类风湿关节炎模型大鼠的作用机制研究.北京中医药(07),728-732.
26. 杨家熙，苗宇，万盈盈，孙文婷，王文乾，王皓男...&寇秋爱.(2023).金藤清痹颗粒对胶原诱导性类风湿关节炎大鼠滑膜血管新生的影响.世界中医药(22),3194-3201.

陈家旭博士治疗慢性肾脏病的临证经验

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陈家旭医师，1949年生，新加坡中医师，毕业于新加坡中医学院、同济医药研究学院、天津中医药大学硕士学位（中医内科学），师从天津肾病名老中医黄文政教授。2008年获得中国中医科学院医学博士学位（中医基础理论）。陈医师从事肾脏专业工作38年，精研经典，经验丰富。著作《肾脏病研究》、《黄帝内经》“治未病”理论研究。陈医师在临床实践中不断总结慢性肾脏病的辨证经验，尤擅治疗糖尿病、肾病，重视慢性肾衰化毒疗法研究，提出整体功能补偿论治慢性肾衰思路，现将陈医师对肾病之认识及治疗思路总结如下，以资同道。

一、化毒疗法思路

陈医师针对性应用化毒疗法的思路，在中医辨病和辨证论治原则下进行慢性肾衰治疗，先以“化毒”为先，进而达到排毒祛毒的目的。陈医师归纳为四大法则为：

（一）健脾保肾养心，扶正以祛邪。

慢性肾衰中晚期脾肾衰败，并常涉及心脏，因而健脾保肾外，还应固护心气心血，配伍生脉片、四君子片、六君子片、藿香正气片等达扶正祛邪之目的。临床实践中，慢性肾病合并贫血的患者或肾衰老年性患者，常见心肾衰退的表现，脉象多有结代。对此类患者，在中草药剂基础上，配伍生脉片，可达到益气复脉、养阴生津之功效，有助于恢复心脏功能，消除脉结代症状。除此之外，陈医师临床上常加葛根，以改善血液循环，扩张血管，从而起到保护心脏血管的作用。

（二）利尿祛湿，通便泄浊，化毒而排毒。

慢性肾衰由于三焦气化不利，热毒、湿毒、瘀毒、溺毒储留不泄，充斥三焦，而造成机体脏腑功能紊乱。针对化毒疗法，陈医师通过辨病、辨证选用大黄润肠通便泄浊，制何首乌配伍土茯苓、金钱草解毒除湿，配伍陈皮、车前子、薏苡仁、玉米须、白茅根、瞿麦以利尿祛湿降浊，通过化毒而达到排毒的功效。茯苓、苍术、白术、淮山药、陈皮、金钱草、桑白皮健脾渗湿、利水通淋化毒。

（三）健脾燥湿，降逆和胃，芳香化湿以化毒、解毒降浊。

纳呆厌食、神疲乏力、恶心、呕吐、腹泻或便秘等是慢性肾衰晚期常见的症状。运用姜半夏、陈皮、藿香、苍术、白术、大黄、淡竹茹可以健脾和胃、芳香化浊、降逆止呕化毒，以起到解毒、化毒降浊的作用。

（四）补气补血、佐活血化瘀、止血生新。扶正以祛邪。

脾为气血生化之源，因脾气虚弱，气血生化乏源，慢性肾衰患者常可见贫血。临床上可用黄芪、当归补气补血，配伍党参、白术、山药调和气血，健脾养血，佐以活血化瘀药如丹参、赤芍、川芎。慢性肾衰患者亦可伴有凝血功能障碍，白茅根、茜草、旱莲草、白芨、大蓟、小蓟、地榆、仙鹤草等中药有助于止血。

二、中晚期慢性肾脏病的治疗原则

对于治疗中晚期慢性肾脏病等疾病，陈家旭医师在防治上遵循着的原则如下：辨证论治，辨病为助；药简精专，效验价廉；仁心仁术，医患同心；健脾益气，扶正祛邪；经方成药，协同增效；整体补偿，二阴分消；药食同源，盖性无毒；无毒缓攻，缓治图功。

（一）辨证论治，辨病为助：陈医师认为辨证论治是治疗的精髓和基础，根据患者具体症状而辨证用药，方随法变，量因证异。而辨病为助，指导治疗思路的大致方向，知道疾病的发展情况，更好地为治疗预后绸缪。例如慢性肾脏病，是以肾虚为本，可兼有浊毒、瘀毒、湿毒等，疾病进展后期可涉及心肺，治疗时应注重固护心气心血等，而治疗时可以考虑从这以下几点治疗。

（二）药简精专，效验价廉：由于慢性肾脏病患者病程缠绵，需长期不间断服药，用药要注意，每日用药不可负荷过重。诊疗患者时，处方用药应把握分寸，抓住主要矛盾，标本兼顾。精准用药，不能盲目乱投药，应掌握相近药物之间的细微不同功效，方能取得良好临床疗效。除了讲究中药药性、归经、配伍，也应适当参考现代药理研究分析，以期获得良好临床疗效。同时应参考药物的价格，考虑患者的经济，选择适当的药物治疗。

（三）仁心仁术，医患同心：医者仁心，考虑患者身在病痛之中，体谅患者痛苦之处，给予患者细心的

关怀，医者除了应有责任心、爱心、关怀之心、还应该有进取心，不断提升自己的知识和医术，将学到的知识运用到临床上。医者站在患者角度思考，与患者同心协力，战胜疾病。若医患不配合，疾病疗效往往大打折扣。

（四）健脾益气，扶正祛邪：慢性肾脏病中后期，因肾虚日久，脾失于温煦，清阳不升，精微失于输布，清浊混杂外泄，故见尿蛋白与血尿；浊阴不降，上犯于胃，则见痞满、恶心呕吐等。脾肾两虚，气化无权，湿、瘀、毒互结，因此治疗时应健脾益气，扶正祛邪，陈医师常佐以生脉片、四君子片、六君子片等达扶正祛邪之目的。健脾益气为主，陈医师常选用陈皮，茯苓，白术(苍术)，北芪，其中重用黄芪，白术有助提高血中白蛋白，增强利水消肿之功效，临床可适当辨证选用麻黄配伍桂枝、制附子、羊藿叶增强利水消肿之效果。

（五）经方成药，减毒增效：经方广义为经验效方，狭义为张仲景的方子。经方能够经过几千年历代医家所赞誉及传承，足见经方的疗效卓著，而临床上医师辨证得当，疗效立竿见影，因此受到诸多医家的推崇。陈医师主张通过运用经方，达到减少西药毒性的副作用，从而提高临床疗效。例如，治疗胃炎、泛酸的患者，西医多数给予患者奥美拉唑（Omeprazole）治疗，具有抑制胃酸分泌过多的作用。但是对于脾胃虚弱兼有肾功能不佳的患者，奥美拉唑存在肾功能减退的风险，因此此时使用中药经方治疗如平胃片、四君子汤等，使脾胃健运，减少西药副作用。

（六）整体补偿，二阴分消：西医治疗慢性肾功能衰竭后期是多学科相互协作的。中医相对亦如此，慢性肾脏病中后期可牵连多脏腑，临床表现多五脏六腑功能虚衰，因此治疗时应从五脏整体观念思考和治疗。除了脾肾气、阴、阳两虚等方面考虑，应从肺气虚，心气、阳虚，肝肾阴虚等多方面兼顾治疗。另外除了五脏六腑虚损方面思考，还得从湿热、浊毒、血瘀等方面入手，例如从前后二阴，通腑泄浊解毒和利尿泄浊，维持五脏六腑的协调和相对的稳定。陈医师常选用车前子，金钱草，瞿麦，土茯苓，萆薢，白茅根以利尿祛浊，二阴分消。

（七）药食同源，盖性无毒：药是从食物发展而来的，陈医师主张药食同源。治疗时尽量选用无毒性副作用的中药、或选用亦食亦药的中药处方。陈医师认为西医西药治疗晚期慢性肾脏疾病是对症治疗，伴随症状的增多而增加用药，这时西药的毒副作用大于治疗作用。这是西药治疗晚期慢性肾脏疾病的瓶颈。所以主张治疗慢性肾脏病要开发具有药食同源而无毒副作用的中药，可以长期有效的治疗。

（八）无毒缓攻，缓治图功：慢性肾功能衰竭是个病程缠绵、迁延不愈的疾病，如何维持肾功能稳定是治疗最主要的目的。因此，陈医师认为治疗慢性肾功能衰竭是需要耐心，治疗需要缓缓治之，切忌着急，并用药不可过用峻猛、偏激、燥烈、温燥的药，应以平和适中为佳。陈医师认为中药应每日服用，以确保药效，因此特别注重选用无毒的药。

三、糖尿病肾病的治疗方法

对于糖尿病肾病，陈医师有以下的见解。陈医师认为二型糖尿病是由于饮食不节、过食肥甘，并有不良生活习惯所导致的肥臃体质。《素问.奇病论》“五味入口，藏于胃，脾为之行其精气，津液在脾，故令人口甘也，此五气之溢也，名曰脾瘅。”日久脾胃失调、脾不散精，气郁化热化火证，导致五气之溢，形成脾瘅，相当于早期糖尿病阶段的症状。《素问·奇病论》“肥者令人内热，甘者令人中满，故其气上溢，转为消渴。”若未能调节，可逐渐发展为消渴，也就是临床的糖尿病。若血糖长期控制不佳，可逐渐形成消瘅，也就是糖尿病并发症，此阶段为五脏皆柔弱者。基本病机为津液亏虚，燥热内盛，日久湿浊、瘀毒内生，互为因果。陈医师治疗糖尿病肾病的治疗法则为清热润燥，养阴生津，佐以解毒，凉血散瘀，二阴分消，辨证论治。临床强调辨标本虚实的同时要紧抓“内热伤阴耗气”的基本病机。常用方剂包括了玉女煎、人参白虎汤、葛根芩连汤、三黄泻心汤、参芪地黄汤、知柏地黄汤、沙参麦冬汤、补中益气汤、三桑汤（桑叶、桑枝、桑白皮）、参芩白术汤加减。《神农本草经》主治消渴的葛根、知母是必用药，苍术、白术临床效果良好。

四、其他医家治疗慢性肾病异同

对于治疗慢性肾脏病，诸多医家与陈医师都从健脾泄浊的思路着手。杜雨茂教授对于《伤寒论》有深入研究，善用六经辨证，倡导“肾病从六经论治”，对于肾病太阴病期，认为脾为后天之本，脾阳虚弱，水湿内停是关键病机，常用桂枝人参汤化裁治疗以健脾助运，祛湿泄浊。[1]在慢性肾衰竭的治疗，杜雨茂教授与陈医师把持着同样的观念，深得张仲景固护胃气的学术思想，治疗中重视患者的脾胃，固护中州之意义。刘渡舟教授亦注重健脾渗湿为治疗慢性肾病的大法，刘教授认为慢性肾病的核心病机为脾肾之清阳不升，湿浊下注于肾，肾气化失司，浊毒内留。[2]治疗时补益肾元，同时注重恢复气机升降出入的理论，认为升清阳中有降浊阴之功，渗湿泄浊，清化湿浊之邪。孙伟教授亦认为慢性肾衰是以肾虚为本，夹有湿瘀，提出了“肾虚湿瘀”理论，慢性肾病后期应重视通腑泄浊，使浊毒“邪有出路”，治疗上孙伟教授善于用大黄通利肠府。[3]这与陈医师思路相同，针对慢性肾衰进行化毒疗法，通过健脾燥湿，降逆和胃，芳香化湿以化毒、解毒降浊，利尿祛湿，通便泄浊以助通腑泄浊。

陈以平教授提出了斡旋“三焦”理论治疗慢性肾病，中焦肝胆为气机之枢纽，为三焦气机升降的关键，三

焦气机不利，肺脾肾功能失调，湿浊内生，以疏肝利胆，疏通三焦壅滞，常用柴胡、黄芩、白芍、郁金，再用黄芪补中气实三焦，健脾升清，并用虫类药消癥散结以针对久病入络的病机。[4]马晓燕教授治疗慢性肾病注重气机升降理论的应用，脾肾同治，益气扶正，醒脾升清，和胃降浊，疏肝理气，宣肺利水，常用藿香、佩兰、砂仁等芳香化湿，醒脾升清之品，配伍半夏、苍术、陈皮等燥湿健脾，和胃降浊。[5]

上述医师们的经验强调辨证施治，注重了脾胃功能与气机的调理，以及根据患者具体情况灵活运用中医治疗方法，对慢性肾衰竭的中医治疗提供了宝贵的参考。

五、肾病的“治未病”思想

陈家旭医师治疗肾病本着“治未病”的理念，认为应坚持和重视将“治未病”思想贯穿于治疗过程的始末。

（一）保养先天，未病先防

肾病可因六淫、戾气、药毒、七情及饮食不节、劳逸失调等因素诱发及加重肾病情况，加上痰饮、瘀血、湿浊等病理产物亦可作为致病及加重肾病的病因。因此，积极保养预防非常关键。肾病的预防首先要从饮食有节，起居有常开始，调节情志，劳逸结合，以达到养生防病的目的。尤以饮食有节为重要，例如肥胖症、糖尿病、高血压、痛风等，是为间接导致继发性肾病的主因和加重因素。

（二）欲病救萌，防微杜渐

欲病救萌是指在疾病尚未发生，但出现先兆，处于萌芽状态时，积极诊断与治疗，防止疾病的发生。例如，出现血尿、尿蛋白、水肿等应及早治疗，避免疾病的发生发展。对于已患有肾病的患者，防微杜渐，是指防止肾病的加重。例如感冒、感染、劳累可使肾病的症状如尿蛋白、水肿等加重，因此积极预防感冒、劳累、感染等可防止肾病的进展速度及恶化。

（三）有病早治，防其传变

当诊断为慢性肾病时，应积极治疗，采取措施，早期治疗，防止疾病的转变，或恶化加重。对于患有肾功能不全患者，应适当限制蛋白质摄入量，减轻肾脏的负荷，防止步入慢性肾衰和高磷低钙所致的并发症。肾脏病一旦进入肾功能不全，其进展速度很快，这时治疗重点在早期治疗，防止恶化，延缓肾功能衰竭。

正常情况下，肾主要助于维持稳定血清磷酸盐水平和调节磷酸盐的排泄，但是随着慢性肾脏病的进展，肾脏失去了排泄过量磷酸盐的能力，导致高磷血症。血清的磷酸盐与游离钙结合，从而降低离子钙水平，离子钙水平的下降会促使甲状旁腺分泌更多的甲状腺旁腺激素（Parathyroid Hormone, PTH），导致继发性甲状旁腺功能亢进。PTH会促进骨骼释放钙、增加肾脏对钙的重吸收，并刺激维生素D的活化以帮助恢复钙的水平。但是在慢性肾病中，肾脏对PTH的反应较差，将维生素D活化的能力降低，因此导致持续高磷低钙的状态。在中晚期肾病患者中，西医重视检测血中的钙磷水平。这也凸显了慢性肾脏病患者通过限制饮食预防高磷低钙的的重要性，不仅可以预防骨骼并发症（如肾性骨病、骨质疏松症的发生），还可以降低磷酸盐-钙失衡导致的血管钙化相关的心血管风险。在慢性肾衰竭晚期，常出现的高磷低钙血症，部分患者亦可并发高磷高钾血症。处于尿毒症晚期的患者在肾脏排磷功能明显减退下，同时摄入过多的高磷食物，尤其骨头汤、浓肉汤等高磷食物，更易诱发高磷血症，其临床表现以皮肤瘙痒为主。鉴于高蛋白物质含有高磷，患者在饮食方面应避免饮用骨头汤、浓肉汤，适度限制蛋白质的摄入量，此为防病情进一步恶化，体现了防其传变的理念。

（四）已病调养

慢性肾脏病中后期多伴有正气虚损，因此正气的顾护固然重要。除了中药治疗以顾护正气，患者的心理、精神状态、生活起居、饮食运动都息息相关。主要措施包括:一、良好生活环境，使身心处于最佳状态，防劳累、潮湿、冷冻；二、舒畅情志，以确保气血流通，阴阳平和；三、预防感冒，防止损伤正气；四、节制饮食，对于肾功能不全患者应适当限制蛋白质摄入量，防止高磷低钙等并发症。对于痛风患者，应该避免高嘌呤的食物，防止尿酸结晶。

六、结语

综上所述，陈家旭医师在治疗慢性肾病秉持着“化毒”为重的思路，并在临床上防治肾病中遵循着自有的原则，将“治未病”思想贯穿于治疗过程的始末。希望陈医师的宝贵经验，能为广大中医同道提供有益参考，共同推动中医肾病的发展与进步。

【参考文献】

1. 董正华，赵天才. 杜雨茂教授运用六经辨证辨治肾脏病法要[J]. 陕西中医, 2013, 34 (6), 738-739.
2. 张保伟.刘渡舟教授治疗慢性肾衰经验摭拾[J]. 中医药学刊, 2004, 22 (4), 584 & 592.
3. 高坤，刘利华，何伟明，夏平，刘琼，赵静，张露，陈继红，孙伟. 孙伟教授肾虚湿瘀学术思想理论与实践[J]. 四川中医, 2019, 37 (6), 5-7.
4. 郭华伟，马志芳，陈以平陈以平三焦辨证治疗肾病经验[J]. 河南中医, 2018, 38 (10), 1495-1498.
5. 包慧妍，马晓燕.马晓燕运用气机升降理论治疗慢性肾衰经验摭拾[J]. 中医药临床杂志, 2015, 27 (9), 1240-1242.

治未病思想在肺癌治疗中的指导应用

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“治未病”理论起源于《内经》，在《难经》、《金匮要略》中均有发展。如《素问·四气调神大论篇》“是故圣人不治已病治未病，不治已乱治未乱”、《素问·刺热篇》“病虽未发，见赤色者刺之，名曰治未病”、《灵枢·逆顺》“上工刺其未生者也”、《素问·八正神明论篇》“上工救其萌芽…下工救其已成”，主要是未病先防的预防观。《难经·七十七难》“所谓治未病者，见肝之病，则知肝当传之与脾，故先实其脾气，无令得受肝之邪，故曰治未病焉”、《金匮要略·脏腑经络先后病脉证第一》“夫肝之病，补用酸，助用焦苦，益用甘味之药调之。酸入肝，焦苦入心，甘入脾。脾能伤肾，肾气微弱，则水不行；水不行，则心火气盛，则伤肺；肺被伤，则金气不行；金气不行，则肝气盛。故实脾，则肝自愈。此治肝补脾之要妙也。肝虚则用此法，实则不在用之”，主要是既病防变的整体治疗原则。

中国中医科学院广安门医院肿瘤科成立于1963年，是集医、教、研一体的国家级中医、中西医结合肿瘤学专业科室；朴炳奎、孙桂芝、花宝金、林洪生等专家在国内外享有盛誉[1]。新加坡同济医院肿瘤组资深医师曾于广安门医院攻读硕博学位，经过30多年的经验积累，通过中医辨证论治方法，在恶性肿瘤病程及西医治疗的不同阶段，给予中医药调理[2]。组内青年医师也在同济医院院方的大力支持和资助下于2024年3月前往广安门医院肿瘤科门诊与病房进行一周的“中医药肿瘤短期培训”。本文章旨在分享广安门医院肿瘤科“治未病”思想在中西医结合治疗肺癌中的指导。

未病先防

肺结节是影像学表现为最大径≤3cm的局灶性、类圆形、较肺实质密度增高的实性或亚实性阴影。早期肺癌可因体积较小、隐藏在肺结节中而很难在术前明确病理诊断[3]。就良性肺结节而言，“邪之所凑，其气必虚”，即使没有明显症状，花宝金教授依据肺“主气”、“喜润恶燥”的生理特点，提出肺结节扶正当以益气养阴为主要方向，可考虑六君子汤或补中益气汤合养肺阴之品（南北沙参、麦冬、百合、芦根等），辨证佐以清热解毒（白花蛇舌草、白英、金荞麦、龙葵、蒲公英、山慈菇、蛇莓等）、化痰解毒（猫爪草、夏枯草、玄参等）或活血解毒（酒大黄、石见穿等）共奏“调气解毒”之功[4,5]。益气养阴为主的扶正培本法充养了肺此娇脏，为其主气司呼吸、行水、朝百脉的生理功能提供物质基础，使机体保持正常高效的运行状态，减少癌变几率，而辅助的化痰散结、活血化瘀等祛邪之法，在消除病理因素的同时使其扶正“补而不滞”、“滋而不腻”[5]。

一旦罹癌，手术、放疗、化疗、分子靶向治疗和免疫治疗是常规手段。林洪生教授运用中医药在放化疗副反应出现或加重前提早予以干预，认为这是延伸未病先防思想的具体表现[6]。从中医角度，放射线多为热毒之邪，蕴结于内易耗伤气血，故用药多以养阴生津（天冬、麦冬、沙参等）、凉补气血（太子参、黄芪、炒白术等）、活血解毒（醋莪术等）为法，在放疗前就让患者服用至治疗结束，减轻不良反应，尽可能保障顺利完成放疗，使其对疾病的作用发挥到最大[7]。

化疗药物副反应因多有不同，林洪生教授也强调先其病服药，在补气养血、健脾益肾的基础上，佐以对症中药[8]。如对容易导致恶心呕吐等消化道反应的顺铂等，宜先降逆止呕、化痰理气（法半夏、淡竹茹、香附、枳壳、佛手等），或骨髓抑制作用较强的卡铂、紫杉醇、吉西他滨等，宜同时补肾填精、滋肝养血（当归、白芍、鸡血藤、菟丝子、阿胶珠、枸杞子、红景天、补骨脂、益智仁等），再若易引起腹泻的依立替康等，先予化湿健脾、固涩止泻（芡实、白豆蔻、诃子等）[6]。

已病防变

确诊癌症后也可参考现代医学提出不同癌种易于转移的部位，适当运用中药“先安未受邪之地”。肺癌常见的转移灶包括如肺内、脊椎、颅内、肝脏等。肺癌可通过淋巴道和血道途径向同侧或对侧肺内转移，孙桂芝教授认为是由于肺气亏虚，正气不足以抵抗癌毒侵袭所致，以气阴两亏较为多见，故常以百合固金汤或麦味地黄丸、参芪地黄汤等化裁治之，益气养阴以固根本，可通过脾肺土金相生理论，补益脾气来增强肺

气，提高肺自身的抵抗力，预防肺内转移[9]。肺癌骨转移常见于肋骨、胸椎、腰椎、骶尾骨处，通过肾主骨生髓理论，孙桂芝教授认为骨转移预防和治疗在于补肾壮骨，常用补骨脂、骨碎补、鹿衔草等[10]。

胸膜有较多的血管、淋巴管和神经，一旦出现转移灶往往引起胸膜粘连疼痛，或大量胸腔积液将压迫肺组织和心脏引起通、换气功能障碍。对于胸膜粘连，孙桂枝教授采用通络散结法施治如苇茎汤化裁，而对于胸腔积液则主张运用宽胸通阳法施治，如瓜蒌薤白半夏汤化裁；也可直接运用具有明确抗肺癌作用的金荞麦、以及浮萍等对症处理。脑转移常引起颅内压升高，脑水肿、恶心、呕吐、甚至抽搐，常用天麻半夏白术汤化裁，加用全蝎、蜈蚣、小白花蛇等镇痉息风[10]。

上列诸多中药的提取成分具有抗肿瘤的现代药理作用或适于某类疾病的循证医学文献支持。补骨脂酚对人类肺腺癌细胞表现出强大的抗癌作用[11]。金荞麦提取物可抑制多种癌细胞的生长，包括肝癌、结肠癌、宫颈癌、骨癌和肉瘤的移植能力，其中Fr4能下调基质金属蛋白酶-9的表达，显著抑制肺癌的进展[12]。天麻则被用作抗惊厥、镇痛和镇静药，适于治疗神经系统疾病[13]。

瘥后防复

抗肿瘤中药的适度使用，还可以有效地抑制残余肿瘤细胞的增殖，减少肿瘤的复发。肺癌追踪期可酌情选用白英、龙葵、金荞麦、半枝莲、半边莲等归肺经，清热解毒的中药，剂量多在15g以下，而且每隔2-3个月交替，防止耐药及毒性蓄积[14]。广安门医院肿瘤科也根据中医理论和肿瘤的临床特点，以黄芪、党参、西洋参、三七等具有益气活血中药为主药，研制出肺瘤平膏，临床观察表明具有较好的防复发作用[15]。

总结

新加坡癌症注册局在2022年公布的最新报告显示男女癌症发病率持平，而且肺癌在两性的发病率均排名前三[16]。虽然病谱与国情有所不同，本次为期一周的“中医药肿瘤短期培训”给同济医院肿瘤组的医师在肺癌未病先防、已病防变，乃至瘥后防复的不同阶段提供了新的防治思路。

【参考文献】

1. 中国中医科学院广安门医院.肿瘤科[EB/OL].https://www.gamyy.cn/gzb/department/oncology_department.html.
2. 肿瘤组[EB/OL]//Singapore Thong Chai Medical Institution. https://www.stcmi.org.sg/medical-services/special-clinics/oncology/?lang=cn.
3. 中华医学会呼吸病学分会, 中国肺癌防治联盟专家组. 肺结节诊治中国专家共识（2024年版）[J]. 中华结核和呼吸杂志, 47(8): 716-729.
4. 亓润智, 赵雨薇, 栾美琪等. 花宝金调气解毒治疗肺结节思想探析[J]. 世界中医药, 2022, 17(11): 1535-1539.
5. 李要远, 郑红刚, 程孟祺. 基于扶正调气法治疗肺结节的运用初探[J]. 中医药学报, 2024, 50(4): 1-4.
6. 王学谦, 林洪生. 林洪生治未病思想在中医药防治肿瘤疾病上的应用[J]. 世界中西医结合杂志, 2014, 9(11): 1157-1159, 1164.
7. 刘志艳, 林洪生. 林洪生中医药防治放疗毒副反应经验[J]. 北京中医药, 2016, 35(7): 664-667.
8. 刘志艳, 王学谦, 林洪生. 林洪生应用中医药防治化疗后毒副反应经验浅析[J]. 世界中西医结合杂志, 2015, 10(3): 314-316, 319.
9. 顾恪波, 王逊, 何立丽等. 孙桂芝诊疗肺癌经验探析[J/OL]. 中国中医药信息杂志, 2013, 20(2). [10] 顾恪波. 孙桂芝教授从痈疡辨治晚期肺癌学术思想及抗肺癌转移的实验研究[D]. 中国中医科学院, 2014.
10. ALAM F, KHAN G N, ASAD M H H B. Psoralea corylifolia L: Ethnobotanical, biological, and chemical aspects: A review[J]. Phytotherapy research : PTR, 2018, 32(4): 597-615.
11. ZHANG L L, HE Y, SHENG F等. Towards a better understanding of Fagopyrum dibotrys: a systematic review[J]. Chinese medicine, 2021, 16: 89.
12. JANG J H, SON Y, KANG S S等. Neuropharmacological Potential of Gastrodia elata Blume and Its Components[J]. Evidence-based complementary and alternative medicine : eCAM, 2015, 2015: 309261.
13. 周慧灵, 郑佳彬, 马雪娇等. 林洪生固本清源理论指导下的恶性肿瘤“五治”治疗经验[J].中华中医药杂志, 2020, 32(01): 195-198.
14. 闫洪飞, 侯炜, 林洪生. 朴炳奎主任医师治疗肺癌的经验[J]. 中国中西医结合外科杂志, 2001, 7(6): 405-406.
15. SINGAPORE CANCER REGISTRY. Singapore Cancer Registry Annual Report 2022[R/OL]. (2024-09). https://www.nrdo.gov.sg/publications/cancer.

浅谈中西医诊治小儿变应性鼻炎

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一、概述

小儿变应性鼻炎 (Allergic Rhinitis, AR) 是一种由过敏原引起的I型变态反应性疾病[1]。患儿在接触变应原（过敏原）后，机体产生以免疫球蛋白E（Immunoglobulin E, IgE）为介导的免疫反应，激活辅助性T细胞2（T-helper 2 cells，Th2 cells），从而引发鼻黏膜的变应性炎症反应。AR是儿童常见的呼吸道疾病之一，临床上以打喷嚏、鼻塞、鼻痒和流涕为主要症状，具有突发性及反复发作等特征。AR的症状能够极大地影响患儿的生活质量，例如影响睡眠、学习、生长发育等[2]。因此，儿童AR应及早发现、及早诊断、及早治疗。本篇将讨论中西医各别对AR的认识、诊断及治疗手段，并且介绍中西医结合治疗AR的效果。

二、西医对变应性鼻炎的认识

2.1 西医病因

AR的发病主要由遗传因素和环境因素所造成。研究显示，父母患有过敏性疾病会增加孩子患上AR的风险。AR的发作常以过敏原的刺激而致，常见的过敏原包括花粉、尘螨、动物皮屑、烟雾、食品和温度变化等。新加坡炎热潮湿，为尘螨理想栖息地，而室内空调又与室外产生较大的温差，AR患儿在日常生活常受到温度变化的刺激，引发一系列鼻部症状。

2.2 西医病机

AR是由IgE介导的I型变态反应。当过敏原首次接触鼻粘膜时，局部的抗原呈递细胞（如树突状细胞）将捕捉过敏原，进行处理后递交给T淋巴细胞。T淋巴细胞受刺激后，则分化为Th2辅助细胞。Th2辅助细胞则产生白细胞介素（interleukins, IL）IL-4，IL-5，IL-13等细胞因子[3]，而这些细胞因子则刺激浆细胞产生过敏原特异性IgE抗体（specific IgE，sIgE）。sIgE与局部肥大细胞、嗜碱性粒细胞表面的高亲和力受体结合，完成致敏过程。当人体再次接触同一个过敏原时，在早期阶段（接触过敏原的5-10分钟内），过敏原与sIgE结合，导致肥大细胞和嗜碱性粒细胞脱颗粒，释放组胺、白三烯、前列腺素等炎症介质。组胺直接刺激神经末梢和血管，诱发鼻痒、喷嚏、流涕、鼻黏膜充血等。在晚期阶段（接触过敏原的4-6小时后），IL-4、IL-3等细胞因子促进嗜酸性粒细胞、嗜碱性粒细胞及淋巴细胞浸润鼻黏膜，使炎症反应持续发作，导致长期鼻塞[1,4]。

2.3 西医诊断

儿童AR的诊断主要根据患儿的家族史、过敏史并结合患儿的临床表现及过敏源检测综合判定。AR患儿常合并过敏性皮炎和支气管哮喘，统称过敏性三联症，即湿疹、哮喘与过敏性鼻炎同时并发。AR 的主要症状包括鼻塞、流清水样涕、打喷嚏、鼻痒等症状，可伴有眼睛瘙痒、眼结膜充血、咳嗽咳痰等。常见的鼻部体征包括鼻粘膜苍白水肿与鼻腔内水样分泌物；眼部体征则包括结膜充血水肿。此外，AR患儿常见过敏性鼻炎三联征，其中包括过敏性皱褶、过敏性敬礼征和过敏性黑眼圈[5]。本病的诊断也应考虑采用过敏原检测，临床多采用皮肤点刺试验、血清特异性IgE检测来明确过敏源[3,6]。

2.4 西医治疗

变应性鼻炎的西医一线治疗包括鼻用糖皮质激素（如糠酸莫米松）、口服或鼻用抗组胺药（如西替利嗪）与口服白三烯受体拮抗剂（孟鲁司特钠）。其他治疗包括鼻腔冲洗、免疫治疗、或手术治疗[7]。患儿也应避免接触过敏原，防止症状复发[7]。

三、中医对变应性鼻炎的认识

变应性鼻炎属于中医“鼻鼽”的范畴，主要临床表现为突发性和反复发作的喷嚏、鼻痒、流清涕等。《说文解字》释：“鼽，病寒鼻窒也。”鼻鼽之病名首见于《素问·脉解》：“所谓客孙脉，则头痛、鼻鼽、腹肿者，阳明并于上，上者则其孙络太阴也，故头痛、鼻鼽、腹肿也。”《素问玄机原病式·六气为病》言：“鼽者，鼻出清涕也……鼻窒，鼻塞也”阐述了鼻鼽的主要症状。

3.1 中医病因病机

小儿鼻鼽由内因、外因合而致病。外因为感受外感六淫邪气，即风、寒、热邪等；而内因为小儿脏腑娇嫩，形气未充。小儿素体肺脾肾不足，形气未充，卫外不固，易感受外邪，邪气犯肺，肺气虚损，肺失通调，津液输布失司，留之为痰，鼻为肺之窍，痰阻肺窍，故鼻塞、流涕、打喷嚏；脾为气之源，小儿脾常不足，脾虚失运，清阳不升，浊阴阻塞清窍；肾为气之根、主纳气，肾虚则纳气无权，气不归元，导致风邪乘虚内侵致病。因此，小儿鼻鼽的发病主要涉及肺、脾、肾三脏。

邱根祥教授[8]认为，鼻鼽发病以感受风、寒、热、湿邪为主，而鼻鼽缠绵难愈，反复发作可归因为先天不足、后天失养、夙风内潜而致，表示本病的病位在肺、脾、肾三脏。邱教授认为风邪袭肺、肺失宣降为鼻鼽的外因发病机制，表示风邪为本病的主导因素。风邪为百病之长，四季皆在，故四季均可发病。鼻鼽

发病急、反复发作、鼻目瘙痒等特征，皆符合风邪致病的特征。小儿为纯阳之体，寒、热、湿邪气易入里化热，炼液成痰，停于鼻窍。寒邪主收引，具有凝滞的特点，可导致津液输布不利，水液停聚。湿邪则为有形之邪，水液停聚成痰湿，阻于鼻窍，导致鼻塞、流涕、喷嚏。邱教授也提出小儿禀赋不足、夙风潜动为小儿鼻鼽发病的内在因素。其夙风，为先天禀赋的不足，加上后天饮食起居不当，形成的特禀质所存在的内风。因此，在小儿鼻鼽的发病基础上，以先天不足，后天失调，外邪侵袭，引动夙风，故本病反复发作，迁延难治。

刘璇教授[9]认为肺脾肾虚、卫表不固为小儿鼻鼽的病机关键。她提出内风和外风致病的重要性，外风指自然界风邪、花粉、尘螨等致敏物质，内风则包括肝风和“伏风”，其伏风因小儿先天禀赋不足，肺脾气虚，疏风不利，风邪留恋于肺而成。肝风因小儿肝常有余，易生肝火，木火刑金，导致肝风内动。外感风邪、肝风内动，均引动伏风而发病，则造成反复鼻痒、喷嚏、流涕。刘教授也提出痰湿、瘀邪为加重此病，使病情迁延难愈的原因。肺主气，朝百脉，肺失宣降则气机不畅，气不行津则津液停聚生痰，气不行则血停，久而成瘀。痰瘀互结，壅滞鼻窍，故鼻粘膜苍白水肿，日久则郁而化热，或内生火热，造成鼻黏膜充血。

郭素香教授[10]则认为脏腑虚寒，外邪袭肺为小儿鼻鼽的发病机制。郭教授重视六淫邪之中的寒邪。小儿形气未充，易触冒风寒，阻遏肺卫，气机郁闭，鼻窍不通，故鼻塞、打喷嚏；肺失宣降，津液输布失常，浊痰留饮，阻塞鼻窍，故流涕。小儿素体脾常不足，脾虚不运，水湿停聚成痰，痰为阴邪，阻遏清阳，脾阳受损，清阳不升，浊痰上犯鼻窍为涕，日久损伤脾阳。久病不愈，子病及母，肺脾虚寒，肺失宣降，脾胃升降失职，痰饮内阻。

3.2 中医辨证论治

根据中华中医药学会发布的《儿童鼻鼽中医诊疗指南》[11]，鼻鼽可分为以下四个证型。

肺经风寒证：鼻塞，鼻痒，喷嚏频频突发，冒风遇寒易作，流清涕，嗅觉减退。可伴眼痒、咽痒，咳嗽痰稀；鼻黏膜色淡，鼻道水样分泌物；舌质淡，苔薄白，脉浮紧，指纹色红。治法为温肺散寒，疏风通窍，代表方为苍耳散（《济生方》）加减。常用药为苍耳子、辛夷、白芷、薄荷、桂枝、荆芥、细辛、防风。

肺经伏热证：鼻塞，鼻痒，喷嚏频频突发，流涕或黄或黏稠，嗅觉减退，或见鼻衄，可伴有咳嗽、咽痒、口干烦热；鼻黏膜色红，咽红，舌质红，苔黄，脉数，指纹色紫。治法为清宣肺气，通利鼻窍，代表方为辛夷清肺饮（《外科正宗》）加减。常用药为辛夷、黄芩、栀子、麦冬、百合、石膏、知母、甘草、枇杷叶、菊花、薄荷。

肺脾气虚证：鼻塞，鼻痒，喷嚏频频突发，流清涕，嗅觉减退反复发作。可见面色萎黄，食少纳呆，消瘦，腹胀，大便溏薄，四肢倦怠乏力，多汗易感；鼻黏膜色淡，鼻道水样分泌物；舌质淡，苔薄白，脉弱，指纹淡。治法为益气健脾，补肺通窍，代表方为玉屏风散（《究原方》）合补中益气汤（《内外伤辨惑论》）加减。常用药为黄芪、白术、防风、党参、茯苓、炙甘草、升麻、陈皮、柴胡、辛夷、白芷。

肺肾阳虚证：鼻塞，鼻痒，喷嚏频频突发，感寒易作，流清涕，嗅觉减退反复发作。可见面色白，形寒肢冷，易感风寒，神疲倦怠，小便清长；鼻黏膜苍白，鼻道水样分泌物；舌质淡，苔白，脉沉细，指纹沉淡。治法为温补肺肾，温通鼻窍，代表方为肾气丸（《金匮要略》）加减。常用药为熟地黄、山药、山茱萸、茯苓、泽泻、牡丹皮、肉桂、附子、细辛、苍耳子、辛夷。

现代医家对小儿鼻鼽的治疗各有特色。邱根祥教授[8]以分期论治儿童AR为主，将疾病分为发作期和缓解期。邱教授在鼻鼽发作期的治疗，主要倡导以消风宣肺，燥湿通窍为主，采用雷氏宣肺消风散，并进行随症加减。其方药组成为麻黄、桂枝、辛夷、苍耳子、杏仁、五味子、半夏、石菖蒲、款冬花、徐长卿等。寒邪重则加荆芥、细辛、白芷等辛温散寒；伴哮喘、咳重者加地龙、紫苏子以降气平喘；鼻塞重者加藿香、丹参；纳呆便溏者，加麸炒白术、薏苡仁健脾止泻。诸药合用，具有消散风邪，调节寒热，化痰燥湿，通鼻窍之效。在缓解期时，因久病难愈，耗伤气血，使脾肾进一步受损，邱教授则注重扶阳固本，益肺健脾益肾。他选用雷氏扶阳固本汤，方药组成为党参、白术、茯苓、炙黄芪、炙甘草、防风、桂枝、仙灵脾、半夏、陈皮。

郭素香教授[10]在治疗小儿鼻鼽常注重病情的季节性。郭师根据患儿平素易感，触冒风寒之邪或四时非节之气后，见恶风怕冷，面白少华，舌淡、苔薄白，辨证为肺气虚寒证。她以温肺通窍、散寒化饮为治疗原则，采用苍耳子散合麻黄汤或小青龙汤加减。若患儿出现面色白或稍黄，形体瘦弱或虚胖，肢乏体倦，声低懒言，胃纳呆滞，腹胀便溏，夜寐不安，舌淡胖嫩、边有齿印等肺脾两虚证时，郭教授以益气健脾、升阳通窍为法，采用玉屏风散合六君子汤加减，并加入通窍宣肺之药，以祛邪扶正的治疗原则贯穿始终。

部分医家则以专病专方进行治疗。临床上常用的方剂包括消风通窍汤、玉屏风散、小青龙汤等专方来治疗小儿鼻鼽，具有显著的效果。其中张彩艳[12]的研究中发现，在口服西药氯雷他定的基础上，加上消风通窍汤治疗能够有效减轻AR患儿的临床症状、炎症反应，且改善免疫功能。处方为黄精、天花粉各10g，辛夷、白芷、五味子、乌梅、防风、石菖蒲各6g，夹热者，酌加黄芩、鱼腥草；偏寒者，酌加川芎，白蒺藜；鼻咽瘙痒者，酌加菊花、蝉蜕、细辛；伴咳嗽者，酌加桔梗、百部、款冬花。

邵剑楠[13]等则在治疗小儿鼻鼽肺气虚寒证采用小青龙汤，发现在口服西药氯雷他定糖浆的基础上，加上小青龙汤治疗，能够更有效的降低sIgE和Th2的水平，改善患儿的免疫功能，减轻炎症反应以及改善临床症状。方剂组成为细辛3g，蜜麻黄4g，半夏、干姜各6g，桂枝、五味子、白芍各9g，甘草3g。

3.3 中医外治疗法

中医外治疗法具有灵活性、安全性、操作简便的特点，用药途径及直达病所的针对性的优势，被誉为“绿色疗法”。中医外治法具有疏通经络、调和气血、调整

阴阳、解毒化瘀、扶正祛邪等作用，从而促进机体的恢复功能，达到治疗疾病的目的。中医外治法亦具有较少的不良反应，且较易被患儿接受的特点[14]。常用治疗小儿鼻鼽的外治疗法包括小儿推拿、穴位贴敷疗法、耳穴压豆、艾灸、中药滴鼻吹鼻、中药洗鼻等。

小儿推拿是常用的中医特色外治疗法，在治疗小儿鼻鼽方面疗效显著。常用的穴位包括迎香、上迎香（鼻通穴）、印堂、天门、坎宫、太阳、耳后高骨、肺俞、足三里等，主要达到通利鼻窍、调节脏腑的功效。现代医家在临床上常以中西医结合治疗小儿鼻鼽，其中陈薇[15]的研究显示，在3个月的治疗后，小儿推拿联合糠酸莫米松鼻喷雾剂的疗效明显高于单纯糠酸莫米松鼻喷雾剂治疗，差异有统计学意义（P<0.05）。

严蕴华等[16]的研究中将70例AR患儿随机分为观察组与对照组，各35例。对照组采用单纯西药（西替利嗪口服）治疗，观察组在对照组治疗方法的基础上结合采用推拿方式辅助治疗。2组患儿均持续进行1个月的治疗。推拿手法为揉鼻通、点揉迎香、点揉上迎香，直推及分推鼻根两侧至迎香穴处，四大手法（推坎宫、开天门、揉耳后高骨、揉太阳穴），揉肺俞、揉大椎、揉百会、揉风池。两组治疗1个月后，观察组的总有效率为97.14%，对照组为82.86%，两组比较后差异有统计学意义（P<0.05）。观察组在症状评分也明显低于对照组（P<0.05）。进行随访6个月后，观察组的总复发率（5.88%）也明显低于对照组（27.59%）（P<0.05）。本次研究证实口服西药西替利嗪联合小儿推拿治疗AR能够明显改善患儿的临床症状，提高疗效，并且降低AR的复发率。

针灸虽在临床上较少用于儿童，但也能有效缓解AR患儿的症状。黄文娴[17]等将75例AR患儿随机分为3组。西药组（15例）予左西替利嗪片口服，揿针治疗组（30例）进行揿针治疗，联合治疗组（30例）予揿针结合左西替利嗪片治疗。揿针取穴为迎香、印堂、肺俞、合谷、风池等穴。治疗1个月后，联合治疗组总有效率为96.67%，高于西药组的70.00%和揿针组的60.00%，差异具有统计学意义（P<0.05），而揿针组60.00%低于西药组70.00%，差异具有统计学意义（P<0.05）。联合治疗组的症状评分低于西药组和揿针组，差异有统计学意义（P<0.05）。研究结果显示中西医结合治疗优于单纯西医或单纯中医治疗。

四、讨论与总结

综上所述，中医在小儿变应性鼻炎的治疗有一定的优势，既能有效地改善患儿的鼻部症状和体征，又能降低患儿的炎症指标，以达到治病求本的效果。中医药的安全性和耐受性良好，故中医药多受家长的欢迎。尽管上述的研究均显示中医对小儿变应性鼻炎有一定的疗效，但研究中仍存在一定的局限性。上述的研究未实施双盲或未具体报道随机分组的方法，故可影响研究结果的客观性和可靠性。部分的研究具有报道治疗后随访，但研究的随访周期各异，且小儿变应性鼻炎是一种慢性疾病，临床上需长期调理，故在评价中医的长期疗效及其安全性方面具有一定的局限性。因此，日后需更多高质量的随机对照试验以进行更科学、更客观、更综合的评价。

【参考文献】

1. Akhouri S, House SA. Allergic Rhinitis. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing[M]; 2023 Jan – . Last update Jul 16, 2023. PMID: 30844213. Available from:https://www.ncbi.nlm.nih.gov/books/NBK538186/
2. Lack G. Pediatric allergic rhinitis and comorbid disorders[J]. J Allergy Clin Immunol, 2001, 108 (1 Suppl): S9 – S15.
3. Min YG. The Pathophysiology, Diagnosis and Treatment of Allergic Rhinitis[J]. Allergy Asthma Immunol Res. 2010, 2(2): 65 – 76.
4. Nur Husna, SM, Tan HT, Md Shukri N, Mohd Ashari NS, Wong KK. Allergic Rhinitis: A Clinical and Pathophysiological Overview[J]. Front. Med., 2022, 9:874114.
5. 儿童过敏性鼻炎诊疗——临床实践指南[J]. 中国实用儿科杂志,2019,34(03):169-175.
6. 汪受传，李辉，徐玲. 中医儿科临床诊疗指南·小儿鼻鼽[J]. 中华中医药杂志，2016,31(04):1352-1355.
7. Loke A, Goh LG, Ramachandran R. Primary care management of allergic rhinitis in children[J]. Singapore medical journal, 2024, 65(9):502 – 507.
8. 王博佳，邱根祥，朱蔓，鲍习奎. 邱根祥治疗小儿过敏性鼻炎经验浅析[J].浙江中西医结合杂志，2024, 34(02):99-102.
9. 胡成旭，刘璇. 刘璇主任医师治疗小儿过敏性鼻炎经验[J]. 中医儿科杂志, 2025, 21(01):25-28.
10. 王旋,郭素香.郭素香教授运用温肺通窍法治疗小儿过敏性鼻炎经验[J].中医儿科杂志，2024, 20(04):34-36.
11. 汪受传，赵霞，王有鹏，冯晓纯，秦艳虹，薛征，吴力群，赵琼，宋桂华，李敏，张雪荣，徐玲，杨燕，赵鋆，李岚，孙香娟，吴泽湘，孙洮玉，廖颖钊，李辉，单祎文，朱子钰. 儿童鼻鼽中医诊疗指南(修订)[J]. 南京中医药大学学报，2023, 39(03):285-292.
12. 张彩艳. 消风通窍汤联合氯雷他定治疗小儿过敏性鼻炎的效果[J]. 中外医学研究, 2023, 21(31):139-143.
13. 邵剑楠，陈春江.小青龙汤辅助治疗小儿过敏性鼻炎肺气虚寒证59例临床观察[J].中医儿科杂志，2024, 20(05):64-69.
14. 戴婷婷. 中医外治法治疗小儿过敏性鼻炎的研究进展[J]. 中国社区医师, 2024, 40(27):4-6.
15. 陈薇. 推拿治疗小儿过敏性鼻炎复发的疗效观察[J]. 浙江中医药大学学报, 2013, 37(06):781-782.
16. 严蕴华，廖彩凤. 推拿辅助治疗儿童过敏性鼻炎临床观察[J]. 光明中医, 2023, 38(17):3414-3416.
17. 黄文娴，张敏愉，罗光亮. 揿针配合药物治疗婴幼儿过敏性鼻炎临床观察[J].云南中医中药杂志，2021, 42(01):64-66.

Commonly used Traditional Chinese Medicine herbs in Oncology in Singapore: A mini-review

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Introduction & Background

Cancer is one of the most pressing health challenges worldwide, impacting millions of lives and posing a significant burden on national healthcare systems [1]. The World Health Organization estimated 18 million new cancer cases and 10 million cancer-related deaths in 2020, highlighting an urgent need for continued research and innovative strategies to combat this disease.

Cancer development involves a complex interplay of genetic, environmental, and lifestyle factors. Normal cells can acquire genetic mutations that disrupt the balance between cell growth and cell death, leading to uncontrolled proliferation [2]. Tumours can also induce angiogenesis, forming new blood vessels for nutrient and oxygen supply, allowing for sustained tumor growth. Furthermore, cancer cells can invade nearby tissues and metastasize to distant sites via the bloodstream or lymphatic system, contributing to disease progression and treatment challenges [3]. Cancer treatment often involves a multidisciplinary approach tailored to the specific origin and progression of the disease. Traditional treatment modalities include surgery, chemotherapy, and radiotherapy, and next-generation methods such as immunotherapy, proton beam therapy, and targeted therapies have also shown great potential in improving patient survival rates and quality of life.

Traditional Chinese Medicine (TCM) is a comprehensive medical system that has been practiced for thousands of years in China, with its origins traced back to ancient texts such as the Huangdi Neijing (Yellow Emperor's Inner Canon) dating back to the 2nd century BCE. In TCM, the human body is characterized as a complex system where the flow of Qi (vital energy), blood and the balance of Yin and Yang through vital organs are crucial for maintaining health. TCM diagnosis involves a holistic approach, which considers the individual's physical, mental, and emotional well-being. TCM treatment modalities may include acupuncture, herbal medicine, moxibustion, and dietary therapy, with the aim to restore balance and promote the body's self-healing mechanisms.

TCM use has a long history in the management of cancer, with historical records of formulations created to alleviate symptoms and improve quality of life dating back more than 2,000 years. In recent years, there has been growing interest in the use of TCM as a complementary therapy to modern treatment methods in cancer care. Numerous clinical trials have been conducted to evaluate the potential benefits and safety of combining TCM with conventional therapies, and have demonstrated potential in improving tumor response rates and reducing treatment-related adverse effects [4]. This mini-review introduces 16 commonly used TCM herbs in oncology in Singapore, their proposed mechanisms of action and current evidence from laboratory and clinical studies.

Commonly used Traditional Chinese Medicine herbs in Oncology in Singapore

Scutellaria barbata (半枝莲)

Scutellaria barbata, Ban Zhi Lian (半枝莲 or BZL), or the barbed skullcap, belongs to the Lamiaceae family of flowering mint plants, and commonly found on field ridges, stream banks, or moist grasslands [5]. BZL is distributed in Guangdong, Zhejiang, Fujian, Taiwan, Guangxi and Hainan. The stems, leaves, and flowers are utilized as a herb and are typically harvested and dried during the flowering stage in spring and summer. In the Ming dynasty book Yao Jing Shi Yi Fu by Jiang Yi, BZL is originally mentioned to be effective against snake bites. It is also used in the treatment of musculoskeletal injuries, hemoptysis, hematemesis, abscesses, and hemorrhoids [5].

In TCM literature, BZL has a cold property and enters the Lung, Liver, and Kidney meridians. BZL clears heat and detoxifies, promotes blood circulation and removes stasis, and promotes diuresis, hence it is categorized as a heat-clearing medicinal herb with detoxifying properties [5]. The recommended dosage is 15-30 grams of dried herbs or 30-60 grams of fresh herbs, which can be decocted and taken orally. For external use, apply an appropriate amount of fresh herb to the affected area after smashing it. It is often

contraindicated for use in pregnant women and patients with blood deficiency [5].

In modern research, BZL's anticancer effects is commonly attributed to the presence of flavonoids and diterpenoids alkaloids which contribute to cancer-specific cyclin/cyclin-dependent kinase (CDK)-modulated cell cycle arrest and apoptotic death [6]. A population study in Taiwan of over 37,000 TCM oncology prescriptions found BZL with Hedyotis diffusa to be the most commonly prescribed duplex herb for breast cancer [7]. In vivo studies of BZL have also found potential anti-tumoral effects in lung cancers [8], ovarian cancers [9], colon cancers [10] and pancreatic cancers [11].

In recent decades, phytochemistry and mechanistic investigations have attempted to create an extract of BZL, dubbed BZL101, with early analysis showing efficacy in inhibition of glycolysis leading to inhibition of ATP generation by cancer cells [12]. A phase 1B trial of BZL101 found the extract to be safe and well tolerated, with promising anticancer activity in pretreated metastatic breast cancer patients [13].

Pseudostellaria heterophylla (太子参)

Pseudostellaria heterophylla, Tai Zi Shen (太子参 or TZS), or the false starwort, grows in fertile and shady wetlands under forests or in damp crevices on shady slopes, and it is also manually cultivated [5]. It is distributed in Hebei, Henan, Shandong, Shanxi, among other places. The plant is harvested in the summer, when most of the stems and leaves wither, and cleaned with the roots removed. The plant is then briefly scalded in boiling water and sun-dried or air-dried [5].

In TCM literature, TZS has a neutral property, a sweet taste, and a slight bitterness, and enters the Spleen and Lung meridians [5]. It invigorates the Qi and tonifies the Spleen, generates fluids, and moistens the Lungs. It is classified as a tonic herb in the category of Qi tonics. The recommended dosage for TZS is 9-30 grams, and aside from oncology, it is commonly used to treat Spleen deficiency with fatigue, poor appetite, post-illness weakness, insufficient Qi and Yin, spontaneous sweating, thirst, and dry cough due to Lung dryness. TZS should be used with caution by those with internal heat and dryness, and those with Yin deficiency and insufficient body fluids [5].

In modern research, TZS was analyzed to contain at least 12 cyclic peptides which aids against inflammation and infiltration of immune cells in the lung [14], and also increases cytotoxic activity against tumors [15]. One of TZS' main peptides, heterophilic B, was shown to mediate cell signaling pathways and reduce adhesion and invasion of esophageal carcinoma cells in humans [15]. In mice studies, TZS has been shown to inhibit migration, invasion and growth of primary and xenografted pancreatic tumor cells leading to an increase in overall survival rates [16]. In chemotherapy-induced immunosuppressed mice, administration of TZS also resulted in improved NK cell activity, macrophage phagocytosis, splenocyte proliferation, intestinal microbiota and humoral immunity [17].

Astragalus propinquus (黄芪)

Astragalus propinquus, Huang Qi (黄芪 or AP) or the Mongolian milkvetch, is commonly found in two variants for medicinal use: Mongolian Astragalus grows in sunny grasslands and mountain slopes, while Membranous-podded Astragalus grows at the edge of forests, shrubs, grasslands in forests, and sparse forests [5]. Both variants are commonly distributed in Heilongjiang, Jilin, Liaoning, Hebei and Inner Mongolia. Wild Astragalus is harvested in spring and autumn. The roots are cleaned, and the root tips are cut off. After drying to about 70-80% of its original moisture content, the roots are graded based on thickness and length. In contrast, cultivated Astragalus are harvested after 3 years of growth [5].

In TCM literature, AP has a mild-warm property and a sweet taste and enters the Spleen and Lung meridians. It tonifies Qi and raises Yang, consolidates the exterior and stops sweating, promotes diuresis and reduces swelling, generates body fluids, nourishes the blood, removes stagnation and unblocks Bi syndromes, discharges toxins and promotes pus drainage, and promotes tissue regeneration [5]. It belongs to the category of Qi tonics in the classification of tonic herbs. The recommended dosage of AP is 9-30 grams, decocted and taken orally, or made into pills, powders, or ointments. Aside from oncology use, AP is used to treat symptoms such as shortness of breath, palpitations, weakness, collapse, spontaneous sweating, night sweats, floating swelling due to Qi deficiency, chronic nephritis, chronic diarrhea, prolapse of the anus or uterus, incipient abscesses that are hard to break or persisting ulcers that do not heal, childhood bronchial asthma, chronic hepatitis B, chronic nephritis, and viral myocarditis. Roasted Astragalus is suitable for tonifying Qi, while fresh Astragalus is suitable for stopping sweating, promoting diuresis, discharging toxins, and promoting tissue regeneration. AP is contraindicated for those with excess pathogenic factors on the surface, Qi stagnation due to dampness, intestinal and stomach stagnation, Yin deficiency with Yang hyperactivity, early-stage abscess or excessive heat-toxin [5].

AP has been extensively studied in modern oncological research, with polysaccharides, saponins and phenolics extracted for further investigations [18]. In vitro studies have shown that AP not only boosts the efficacy of chemotherapies while reducing side effects, but also exerts anti-proliferation and pro-apoptosis effects on cancer cells through [19,20]. In chronic myeloid leukemia cell lines, an

AP extract, galactose-binding lectin, was shown to induce caspase-dependent apoptosis in tumor cells [21]. In gastric cancer cells, AP-induced tumor suppression genes were upregulated, increasing the apoptotic effect of chemotherapy drug Adriamycin [22]. In a recent hepatocellular carcinoma mice study, AP extracts were also found to attenuate PD-L1-mediated immunosuppression with antitumor effects [23].

In human trials, AP was also found to be efficacious when used concurrently with cancer treatment. In a meta-analysis of 65 clinical trials across 4751 non-small-cell lung cancer (NSCLC) patients, AP combined with platinum-based chemotherapy resulted in a more positive treatment outcome when compared to chemotherapy alone [24]. In colorectal cancer, another meta-analysis of 22 studies across 1409 patients found an increased tumor response rate and quality of life, as well as reduced side effects when chemotherapy was used in conjunction with AP [25]. When used in combination with immune checkpoint inhibitors (ICIs), AP improved overall survival in a trial of 53 lung cancer patients [26].

Asides from cancer studies, AP is also shown to have therapeutic effects against cardiovascular diseases, diabetes and hyperlipidemia [27], and has also been studied in human trials against viral myocarditis [28], diabetic neuropathy [29], seasonal allergic rhinitis [30], lupus nephritis [31], and post-stroke fatigue [32] with positive outcomes.

Scleromitrion diffusum - 白花蛇舌草

Scleromitrion diffusum, Oldenlandia diffusa or Bai Hua She She Cao (白花蛇舌草 or BHSSC), or the spreading diamond flower grows in paddy field embankments and damp open areas [5]. It is predominantly found in Guangdong, Hainan, Guangxi, and harvested in summer and used fresh or dried.

In TCM literature, BHSSC has a cool nature, with a slightly bitter and slightly sweet taste, and enters the Stomach, Large Intestine, and Small Intestine meridians. It clears heat, promotes diuresis, detoxifies, and has anticancer properties, and belongs to the category of heat-clearing and detoxifying drugs [5]. It is commonly used in concoctions with a dosage of 50 to 100 grams, or it can be mashed into juice and decocted. Externally, it can be mashed and applied as a paste. Aside from oncology, it is used for treating lung heat with wheezing and cough, swollen and painful throat; damp-heat jaundice, gastritis, cholecystitis, cholelithiasis; enteritis, dysentery, pyelonephritis, urethritis, pelvic inflammatory disease; toxic sores, pulmonary abscess, intestinal abscess, and snake bites. BHSSC should not be used for Yin ulcers, Spleen and Stomach-deficient cold syndromes, and during pregnancy [5].

In in vitro studies, BHSSC has been found to inhibit growth in melanoma as well as lung, cervix, breast, prostate and breast tumor cells, but spares normal pancreatic cells [33]. The study also found a 70% reduction in metastatic lung tumor cell growth in mice with no noticeable side effects. Other in vitro studies have also found similar effects of BHSSC on gastric, colorectal and hepatocellular cancer cell lines [34-37], possibly through immunomodulating activities leading to induced tumor cell death [38,39]. In other studies, BHSSC was also found to be effective against rheumatoid arthritis (RA) [39] and osteoarthritis [40].

Ganoderma lucidum (灵芝)

Ganoderma lucidum, Ling Zhi (灵芝 or LZ), or reishi, grows parasitically on the roots or decaying trunks of oak and other broad-leaved trees, and is commonly found in Hebei, Henan, Shandong, among other regions [5]. Only the fruiting bodies of LZ are used as medicine and can be collected throughout the year. After removing impurities including the attached decaying wood and mud, the lower part of the mycelium is harvested and dried in the shade or at 40-50 degrees Celsius [5].

In TCM literature, LZ has a neutral nature and a sweet taste. It enters the Heart, Lung, Liver, and Kidney meridians [5]. It tonifies qi and calms the spirit, stops coughing, relieves wheezing, and belongs to the category of qi-tonifying drugs. The recommended dosage of LZ is 6-12 grams and aside from oncology, it is also commonly used to treat dizziness and insomnia, palpitations, shortness of breath due to deficiency, and chronic cough and wheezing. LZ should be used with caution in cases of "excess type" syndromes [5].

LZ has been widely studied, with its therapeutic properties attributed to its polysaccharides, peptidoglycans, terpenoids, triterpenes and nitrogenous compounds [41-43]. In a study of 58 mushrooms, LZ was found to be the most effective in its antitumor effects [44], and various analyses have found LZ extracts to induce cell-cycle arrest and apoptosis in many cancers, including lung [45], leukemia [46], liver [47], breast [48], prostate [49], cervical [50], ovarian [51], colorectal [52] and cancer [53]. LZ has also been postulated to have antiangiogenic effects [54,55] through suppression of vascular endothelial growth factor (VEGF) and transforming growth factor (TGF)-β1 [56].

Aside from cancer therapy and supplement use, LZ is also prescribed in the medical setting for other common ailments. A study of 71 patients with diabetes mellitus (DM) found significant reductions in glycosylated hemoglobin (HbA1C) and plasma glucose levels following LZ supplementation [44]. In common viral infections, LZ has also been demonstrated to have synergistic effects when taken with antivirals [57] and has also shown by itself to act against certain virus strains [58,59].

Outside of clinical use, LZ is also popularly taken as a supplement with many purported health benefits. Multiple

lab and mice studies have shown immunostimulant activities of LZ in upregulating NK cells, macrophages, dendritic cells and T and B lymphocytes [60-64]. LZ is also rich in readily-absorbed antioxidants which may further contribute to its antitumoral effects [65].

Ranunculus ternatus (猫爪草)

Ranunculus ternatus, Mao Zhua Cao (猫爪草 or MZC), or the cat claw grass, grows in the fields, roadsides, low-lying areas, and grassy slopes [5]. It is mainly produced in Henan, and it is also found in Jiangsu, Zhejiang, Hubei, among other regions. MZC is collected in spring and autumn. After removing the root hairs and mud, it is dried [5].

In TCM literature, MZC has a warm nature, a sweet and pungent taste, and enters the Liver and Lung meridians. It disperses nodules, detoxifies, and reduces swelling, and belongs to the category of heat-clearing herbs [5]. The recommended dosage for MZC is 10-30 grams, decocted in water for oral administration, or used externally as a pounded paste or applied as a powder. Aside from oncology, it is used to treat lymphadenitis, pulmonary tuberculosis, boils, carbuncles, and toothache. MZC is reported to have slight toxicity, so its dosage should be prescribed with caution [5].

The active components of MZC are its flavonoids, glycosides and benzines [66]. Modern research have shown MZC to have cytotoxic effects on T cell lymphoma Jurkat cells [67] and inhibitory effects on Mycobacterium tuberculosis [68]. More studies and trials are needed to study MZC's purported mechanisms and effects in other cancers and diseases.

Portulaca Oleracea (马齿苋)

Portulaca Oleracea, Common Purslane or Ma Chi Xian (马齿苋 or MCX), or the little hogweed, commonly grows in fields, vegetable gardens, open areas near residential areas, and roadsides [5]. It is drought-resistant and vigorous, and distributed in most regions in China. It is harvested in summer and autumn. The whole plant is harvested, washed, briefly blanched in boiling water, and then dried [5].

In TCM literature, MCX has a sour taste and a cold nature, and enters the Large Intestine and Liver meridians. It clears heat, detoxifies, cools the blood, and stops bleeding, and belongs to the category of heat-clearing drugs with detoxifying properties [5]. The recommended dosage of MCX is 9-15 grams of dried herbs, or 30-60 grams of fresh herbs, decocted for oral administration. For external use, an appropriate amount can be pounded into a paste and applied to the affected area. Aside from oncology, it is commonly used to treat enteritis, bacillary dysentery, boils with swelling and toxicity, snake and insect bites, painful hemorrhoids, eczema, erysipelas, postpartum and functional uterine bleeding, appendicitis, and hookworm disease. MCX is contraindicated for patients with spleen deficiency and loose stools, as well as in pregnant women [5].

MCX's anticancer effects are commonly attributed to high levels of antioxidative polysaccharides [69,70], which scavenge free radicals and modulate the immune system. Studies have shown MCX to be effective against hepatocellular carcinoma [71], gastric cancer [72], lung cancer [73], cervical cancer [74], pancreatic cancer [75], colorectal cancers [76] and brain tumours [77].

In other diseases, MCX was also found to have antimicrobial effects [78] and is effective in prolonging sleep-in mice with insomnia [79]. Modern research of MCX has uncovered many therapeutic properties, some of which include anti-inflammatory [80], antibacterial [81], antiulcerogenic [82] and wound healing effects [83].

Solanum nigrum (龙葵)

Solanum nigrum, Long Kui (龙葵 or LK), or the black nightshade, grows mainly in fields and is distributed throughout various regions in China [5]. It is harvested in summer and autumn when the stems and leaves are lush. The herb can be used fresh or dried.

In TCM literature, LK has a cold nature, a bitter taste, and is slightly toxic, and enters the Bladder meridian. It clears heat, detoxifies, promotes diuresis, reduces swelling, cools the blood, and stops bleeding, and belongs to the category of heat-clearing drugs with detoxifying properties [5]. LK is decocted for oral administration at a dosage of 9-30 grams, and it can be used externally as a paste. Aside from oncology, LK is used to treat heat-toxin-induced boils, abscesses, carbuncles, difficult urination, blood vomiting due to heat and irregular menstruation. LK should be avoided for patients with weak spleen and stomach function, as well as pregnant women [5].

In modern research, LK has been found to have anticancer effects against hepatocellular cancer, cervical cancer [84], breast cancer [85-87], gastric cancer [88], bladder cancer [89], cholangiocarcinoma [90], prostate cancer [91], colorectal cancer [92], pancreatic cancer [93], endometrial cancer [94], renal cancer [95] and osteosarcoma [96]. Degalactotigonin, a LK-derived steroidal glycoside, was found to be effective in inducing cell cycle arrest and apoptosis [93,97] in a majority of these studies.

Besides cancer, LK has also been shown to be useful in treating respiratory diseases [98], gastric disorders [99] and hyperlipidemia [100].

Sargassum pallidum (海藻)

Sargassum pallidum., Hai Zao (海藻 or HZ), or brown seaweed, grows on rocks below the low tide line [5]. Main production areas include Shandong and Liaoning. HZ is

harvested in summer and autumn, cleaned of impurities, washed, and dried.

In TCM literature, LZ has a cold nature, a bitter and salty taste, and enters to the Liver, Stomach, and Kidney meridians. It softens and disperses nodules, eliminates phlegm, and promotes diuresis, and belongs to the category of phlegm-eliminating drugs which also clear heat [5]. The recommended dosage of LZ is 6-12 grams, and it is commonly decocted and taken orally, or soaked in alcohol and made into pills or powders. Aside from oncology, LZ is commonly used to treat goiter, scrofula, testicular swelling and pain, phlegm, edema, and water retention. It should be avoided by individuals with spleen and stomach deficiency-cold and should not be used together with licorice [5].

In modern research, LZ-derived polysaccharides have been shown to have antitumor and immune-regulating activities, inducing apoptosis of cancer cells through cytokine secretion [101] and antioxidative effects [102]. Part of these effects are attributed to naturally occurring polysaccharides [103], fucoidans [104], fucoxanthin [105], laminarans [106] and alginate [107,108] found in LZ extracts.

In clinical trials, LZ extracts have been found to be effective in treating Helicobacter pylori infections, which is the leading cause of gastric cancer [109]; HPV, which is the attributable cause of almost all cervical cancers [110,111]; disrupting colon tumor cell adhesion and growth against uncontrolled cell proliferation [112], and suppressing breast tumors when combined with conventional cancer therapies [113,114]. Most modern studies have found high levels of antioxidative effects in LZ extracts [115,116], which have been shown to enhance immune response in cancer mice models [104,107,117,118]. A case control study of 362 women found a correlation between seaweed consumption and reduced breast cancer risk [119].

Besides cancer, LZ has also been studied for its use in treating allergies [120], diabetes [121], thrombosis [122] and obesity [123], as well as lipidemia [124] and hypertension [125,126].

Smilax Glabra Rhizome (土茯苓)

Smilax Glabra Rhizome, Tu Fu Ling (土茯苓 or TFL), grows in mountainous areas, hillsides, valleys with sparse forests, and shrubs, or along the edges of riverbanks [5]. It is commonly distributed in Guangdong, Hainan, Guangxi and Fujian. TFL is harvested in summer and autumn. The root hairs are cleaned, dried and used. Alternatively, it can be sliced thinly while fresh and then dried after [5].

In TCM literature, TFL has a neutral nature, a sweet and bland taste, and enters the Stomach and Liver meridians. It has detoxifying properties, clears dampness, and promotes joint movement, and belongs to the category of heat-clearing drugs that also eliminate dampness [5]. The dosage of TFL is 15-60 grams, to be decocted and taken orally, or crushed into powder for external application. Aside from oncology, it is used to treat urinary tract infections caused by damp-heat, leukorrhea, abscesses, scrofula, scabies, syphilis, and muscle spasms and bone pain caused by mercury poisoning. In modern practice, TFL is also used in treating acute glomerulonephritis, acute exacerbations of chronic nephritis, hepatitis B, prostatitis, acute orchitis, vaginitis, ulcerative colitis, gout, knee effusion, and gonococcal urethritis.TFL should be used with caution by individuals with Liver and Kidney Yin deficiency [5].

Modern research has uncovered various mechanisms in which TFL exerts its antitumor activity, such as through G6PD inhibition leading to altered tumor metabolism [127], phenolic compound-induced antioxidant activity leading to H2AX and p53 mRNA suppression [128], tumor cell growth inhibition through mitochondrial regulation [129], TGF-β1 pathway [130], ERK1/2 pathway [131] and STAT3/HIF-1 pathway [132] suppression. TFL has also been shown in vitro to work against hepatocellular cancer [133,134], cervical cancer [135] and leukemia [136].

Besides cancer applications, TFL has also been studied to treat psoriasis [137] and hyperuricemia [138,139].

Sarcandra glabra (肿节风)

Sarcandra glabra, Zhong Jie Feng (肿节风 or ZJF), Cao Shan Hu, or the bone-knitted lotus, commonly grows in the shaded and damp areas of evergreen broad-leaved forests or valley edges [5]. It is distributed in Guangdong, Zhejiang, Fujian, Taiwan, Guangxi, Hainan, and other regions, where it is harvested in the summer and then dried.

In TCM literature, ZJF has a neutral nature, a bitter, and pungent taste, and enters the Heart and Liver meridians. It clears heat, cools blood, invigorates blood circulation, eliminates skin blemishes, and dispels wind and opens collaterals, and belongs to the category of heat-clearing and blood-cooling herbs [5]. The dosage of ZJF is 9-30 grams, to be decocted and taken orally. It is used to treat blood heat-related purpura, skin ecchymosis, rheumatic pain, bruises, influenza, pediatric pneumonia, and lobular pneumonia. ZJF should be avoided by those with Yin deficiency and excessive internal heat, and pregnant women should not use it. Pre-decoction or prolonged decoction is recommended [5].

The antitumoral effects of ZJF is commonly attributed to its abundant sesquiterpenes [140], organic acids [141] and coumarins [142,143]. In vitro tests of ZJF have been conducted against bone cancer with positive outcomes [144] , and a clinical trial of 60 patients found ZJF to be effective in alleviating radiation-induced xerostomia (dry mouth) in nasopharyngeal carcinoma [145].

Besides its use in cancer treatment, ZJF has also shown to have broad antibacterial [146], antiviral [147], anti-inflammatory [148-150], antioxidative [151,152], anti-

thrombocytopenic and immune regulatory effects [153]. It is also hepaprotective [154] and may aid in improving lipid and glucose levels [155,156].

Euonymus alatus (鬼箭羽)

Euonymus alatus, Gui Jian Yu (鬼箭羽 or GJY), or the winged burning bush, is native to mountainous areas or cultivated in gardens. It is distributed in various regions of northern, central, eastern, and southwestern China, and can be harvested throughout the year [5]. After cutting the branches, the tender shoots and leaves are removed and dried. Alternatively, the winged parts also can be collected and dried.

In TCM literature, GJY has a cold nature, a bitter taste, and enters the Liver and Spleen meridians. It promotes blood circulation, regulates menstruation, dispels blood stasis, and relieves pain [5]. It belongs to the category of blood circulation promoting drugs that also regulate menstruation. The dosage of GJY is 6-10 grams, to be decocted and taken orally. It is used to treat irregular menstruation, postpartum abdominal pain due to blood stasis, bruises, injuries, and abdominal pain caused by intestinal worms. GJY is contraindicated in pregnant women and those with Qi deficiency [5].

GJY has been shown to induce apoptosis in in vitro studies of various tumours [157,158], including colon [159] and liver cancers [160]. It is also effective in noncancerous tumours such as uterine fibroids [161]. GJY's cytotoxic effects are largely attributed to its triterpenoids [162] and phenolic compounds [163,164], and it is also commonly used in diabetes mellitus and has been shown to aid in controlling glucose levels [165-167].

Sparganium stoloniferum (三棱) and Curcumae rhizoma (莪术)

Sparganium stoloniferum, Sparganii rhizoma, San Leng, (三棱 or SL), or the bur reed rhizome, is found in damp and low-lying areas, ditches, and marshes. It is distributed in Heilongjiang, Jilin, Liaoning, and other regions [5]. It is usually harvested in spring and autumn. After cutting off the withered stems and leaves, the rhizomes are dug out, washed, and partially dried. The root hairs and coarse skin are then removed and the rhizome dried completely. In TCM literature, SL has a neutral nature, a pungent, and bitter taste, and enters the Liver and Spleen meridians. It breaks up blood stasis, promotes qi circulation, and relieves pain and belongs to the category of blood-breaking drugs. The dosage of SL is 4.5-9 grams, to be decocted and taken orally or made into pills or powder. Aside from oncological use, it is also used to treat blood stasis causing amenorrhea, food stagnation with distending pain, abdominal pain, dysmenorrhea, bruises, and injuries. EZ is not suitable for those with deficient Qi, blood dryness, excessive menstrual bleeding, and pregnant women [5].

SL has been shown in vitro to inhibit cell proliferation in breast cancers [168], cervical cancers [169], and prostate cancer [170], with its effects largely credited to its antioxidative phenolic compounds [171,172]. It is also used in the treatment of benign nodules and masses such as uterine [173] and pulmonary fibroids [174], and has also been studied for its liver [175] and renal protective properties [176] as well as for its antithrombotic activities [177].

Curcumae rhizoma, E Zhu (莪术 or EZ), is commonly found on slopes, by villages, or in partially shaded and moist areas under trees and is also cultivated. It is distributed mostly in Zhejiang, Jiangxi, Fujian, Taiwan, Hunan, Guangdong, Guangxi, Sichuan, and Yunnan. After the stems and leaves wither in winter, the plant is harvested, washed, steamed, or boiled until fully cooked, and then dried or dried at low temperature to remove root hairs and impurities. In TCM literature, EZ has a warm nature, a pungent, and bitter taste, and enters the Spleen and Liver meridians promotes Qi circulation, breaks up blood stasis, dispels stagnation, and relieves pain. The dosage of EZ is 6-9 grams, to be decocted and taken orally, made into pills, powder, or used externally as a wash or applied as a powder. Aside from oncological use, it is used to treat masses or lumps in the abdomen, blood stasis causing amenorrhea and food stagnation with distending pain [5]. EZ is contraindicated for use in pregnant women.

The antitumor effects of EZ are widely attributed to its β-element terpenoid and curcuminoid compounds, which exert apoptotic effects on cancer cells through cell cycle arrest mechanisms [178-180]. EZ, as well as a proprietary medicine made of its extract, Zedoary Turmeric Oil (ZTO), has shown promising antitumor and antioxidative effects against various cancers including brain, ovary, prostate, breast, lungs, liver, colon, nasal and prostate [181-187]. EZ has also been studied for its hepatoprotective, anti-fibrotic, anti-neoplastic and anti-HBV effects in liver diseases [179,181,188], as well as promotion of healthy bile flow [179], antiplatelet activities [189,190] and estrogen-antagonistic effects in menstrual pain [191,192]. It has also been studied as a potential therapeutic against myocardial fibrosis [193] and treatment modality for COVID-19 [194].

In both traditional and modern practice SL and EZ are often paired together to produce synergistic effects [195], with zederone, curcumol, chlorogenic acid and calycosin identified as active antitumor components in this pairing [196]. The pairing has also been analyzed against and shown to exert therapeutic effects against liver cancer [197], lung cancer [198], squamous cell mouth cancer [199], breast cancer [200], liver fibrosis [201] and uterine tumours and fibroids [202-204].

Cremastra appendiculata (山慈菇)

Cremastra appendiculata, Shan Ci Gu (山慈菇 or SCG), or the warty lip cremastra, grows in shady and damp places in mountain gullies or on mud-covered stone walls near valleys. It is found in the Yellow River basin, as well as southern-south western regions of China [5]. It is harvested in summer and autumn. Withered stems, scales, and root hairs are removed. After cleaning, it is steamed and dried.

In TCM literature, SCG has a cool nature, a sweet taste, and a slight pungent flavor. It enters the Liver and Spleen meridians. It clears heat, detoxifies, and dispels phlegm and nodules and belongs to the category of heat-clearing and detoxifying drugs [5]. The recommended dosage of SCG is 3-9 grams, to be decocted and taken orally. It is also less commonly used externally. SCG is used to treat abscesses, swelling, carbuncles, lymphadenitis, and snake or insect bites. SCG should be used with caution in individuals with deficiency and weak body constitution [5].

The antitumor effects of SCG are attributed to its cytotoxic [205], anti-angiogenic and antiproliferative [206], and antioxidative effects [207]. It has been shown to be effective against various cancers including liver [205]], gastric [208], breast [209,210], thyroid [211], lung [212,213] and bone [214] cancers. It is also purported to be effective against hypertension and [215] hyperlipidemia [216,217].

Curcuma longa (姜黄)

Curcuma longa, Jiang Huang (姜黄 or JH), or the common turmeric, is cultivated in sunny, fertile, and loose soil fields. It is commonly distributed in Taiwan, Fujian, Zhejiang, and Hubei among other regions [5]. It is harvested in autumn or winter, washed, boiled until thoroughly cooked, then dried and peeled.

In TCM literature, JH has a warm nature, a bitter and pungent taste, and belongs to the Spleen and Liver meridians. JH promotes blood circulation, relieves stagnation, regulates menstruation, and alleviates pain [5]. It belongs to the category of blood-circulation promoting and pain-relieving herbs. The dosage recommendation is 3-9 grams. Apart from oncology use, JH is used to treat abdominal pain, fullness, and distention, abdominal masses, blood stasis and amenorrhea in women, postpartum blood stasis and abdominal pain, injuries from falls, and carbuncles and swellings. JH should be used with caution in individuals with blood deficiency, Qi stagnation, blood stasis, and pregnant women [5].

Curcuminoids are one of the major compounds found in JH and has been extensively studied for its antioxidative [179,218,219] and antitumoral effects. It acts through various mechanisms such as inhibiting angiogenesis [220,221], activating p53 pathways [222,223], Ras/ERK regulation [224] and transcriptional inhibition [225-227]. JH has been shown to be effective against various cancers such as breast [228-230], liver [231], pancreatic [232], colon [233,234], lung [226], and prostate [235].

Besides its anti-cancer properties, JH is also antibacterial [236], anti-inflammatory [237-240], neuroprotective [241-243], hepatoprotective [244-246] and cardioprotective [247,248]. It has also been widely used in clinical trials, with a systematic review of 389 trials reporting metabolic, musculoskeletal, neuropsychiatric, gastrointestinal disorders and cancer as the top 5 conditions for JH studies [249]. The review found JH to be most effective in diseases where inflammation is a driving factor, and can contribute to a reduction in mortality, morbidity and loss of productivity when used in these ailments.

Recent decades have seen an increasing number of studies, each claiming improved extraction methods with increased bioavailability and efficacy [250]. Outside of the clinical setting, JH is also widely used as a traditional spice in cooking [251] and consumed as a dietary supplement as a homeopathic treatment to a wide variety of common ailments.

Conclusion

This mini-review highlights the longstanding use and properties of commonly prescribed TCM herbs in oncology. TCM has been used in cancer management throughout the last two thousand years of human history, and recent studies are starting to shed some light on their mechanisms of action. By integrating ancient wisdom with modern research, TCM can offer a promising complementary approach to modern conventional cancer treatment. The diverse bioactive compounds in many herbs demonstrate anti-cancer properties and provide a multi-targeted approach to tackle the complexity of cancer biology. While many preclinical and clinical studies support the efficacy of TCM use alongside active western medicine treatment, further research and clinical trials are necessary for validation and translation of its widespread use in clinical settings. Further collaboration between practitioners and researchers can lead to more effective personalized and holistic cancer therapies, advancing the global fight against cancer and improving treatment and prognosis for patients.

【References】Omitted

The Safety and Efficacy of using Astragalus membranaceous on patients with Primary Hypertension

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Introduction

Hypertension is one of the most common chronic conditions in the world today, affecting up to 1.28 billion adults aged 30-79 years old, and is considered one of the major causes of premature death worldwide[1]. Hypertension is broadly categorized into primary (or essential) hypertension and secondary hypertension. Primary hypertension, also referred to as idiopathic hypertension, accounts for 95% of diagnosed cases[2 3]. Secondary hypertension is less common and occurs as a result of pre-existing conditions such as renovascular disease or renal failure or due to certain drugs and medication[2].

Hypertension has multiple proposed causes and risk factors, including high salt intake, sedentary lifestyle, genetics predisposition, obesity, alcohol consumption, and stress etc[2 3]. Research has shed light as to the various mechanisms that lead to the development of hypertension, such as how increased salt absorption results in blood volume expansion, an impaired response of the renin-angiotensin-aldosterone system (RAAS), and increased activation of the sympathetic nervous system. These changes then lead to an increase in total peripheral resistance and increased afterload, which in turn leads to the development of hypertension[3].

The current definition of hypertension (HTN) is having systolic blood pressure (SBP) values of 130mmHg or more and/or diastolic blood pressure (DBP) of more than 80 mmHg3. Currently, the most commonly used guidelines for the diagnosis and management of hypertension are from the American College of Cardiology/American Heart Association and the European Society of Cardiology and the European Society of Hypertension.

The American College of Cardiology/American Heart Association categorizes hypertension according to clinical blood pressure, dividing hypertension into the following stages[4]:

Blood Pressure Category	Systolic Pressure (mmHg)	Diastolic Pressure (mmHg)
Normal	< 120	<80
Elevated/ Normal-High	130	80-89
Stage 1	140-159	90-99
Stage 2	160	100
*Isolated Systolic Hypertension	>140	<90

Table 1. Hypertension Categories according to The American College of Cardiology/American Heart Association[4].

Blood Pressure Category	Systolic Pressure (mmHg)	Diastolic Pressure (mmHg)
Optimal	<120	<80
Normal	120-129	80-84
Normal - High	130-139	85-89
Grade 1 Hypertension	140-159	90-99
Grade 2 Hypertension	160-179	100-109
Grade 3 Hypertension	>180	>110
*Isolated Systolic Hypertension	>140	<90

Table 2. Hypertension Categories according to the European Society of Cardiology and the European Society of Hypertension[5]

Different guidelines have different recommendations with regards to starting pharmacological treatment, but patient education and lifestyle changes such as diet and weight management, are recommended for all hypertensive patients[3]. Uncontrolled hypertension is

associated with multiple complications, such as coronary heart disease, myocardial infarction, stroke, hypertensive encephalopathy, renal failure, peripheral arterial disease, atrial fibrillation, aortic aneurysm and death[6]. As such, there is much reason and urgency in addressing patients who present with hypertension.

TCM's perspective on Hypertension

Hypertension and the concept of high blood pressure is not mentioned in historical TCM literature, however, there are many references to the common presentations of hypertension, such as headache and dizziness[7,8], and in some cases where hypertension has progressed and caused systemic complications, there is mention of edema, angina, heart palpitations, and stroke.

From the TCM point of view, the root causes of hypertension can be attributed to emotional imbalance, improper diet, prenatal insufficiency, and blood and qi and essence or jing (精) deficiency[7,8]. As the condition develops, we see it fall between two broad syndrome types – deficiency, or excess, with many patients having a mixture of deficiency and excess in various areas. Deficiency of qi and blood, or deficiency of the kidney and liver, results in a lack of nourishment to the brain. Excess of heat, phlegm, wind, or stagnated blood disturbs the regular function of the brain. Overall, the TCM pathologies of hypertension are attributed to excess liver yang, phlegm and dampness, stagnated blood, and deficiency of liver and kidney yin[9]. Unlike conventional western medication, TCM treatment is based on syndrome differentiation, depending on the symptoms the patient presents with and the corresponding syndrome type, various herbal formulas or concoctions can be used to treat hypertension. A study done in Taiwan revealed that the most commonly used formula is Tianma Gouteng Concoction (天麻钩藤汤) [9], as majority of hypertensive patients have an excess of liver yang and/or wind that rises and disrupts the proper flow of qi at the brain.

However, as Hypertension is primarily managed using conventional western medication in modern times, majority of the patients who have hypertension seek TCM treatment for other conditions, raising the issue of drug-herb interaction especially for herbs with a nourishing effect, such as Astragalus membranaceous (黄芪). According to the published National herbal medicine assembly (全国中草药汇编)[10], Astragalus membranaceous is able to strengthen contractions of the heart muscle in individuals with heart failure which then increase blood flow from the heart and raises blood pressure; it is also able to dilate blood vessels, improve peripheral circulation, which reduces the blood pressure in hypertensive individuals. According to the Chinese Pharmacopoeia (中国药典)[11] traditionally, its known to be able to nourish the qi and bolster immunity, work as a diuretic to facilitate urination, as well as expel toxin and pus and aid in wound healing. In TCM, its commonly used in treating fatigue and qi deficiency, lack of appetite and soft stool, subsidence of middle qi, prolonged diarrhea and prolapse of the anus, bloody stool and metrorrhagia, surface deficiency and spontaneous sweating, qi deficiency related edema etc.

Astragaloside IV (黄芪皂苷Ⅳ/黄芪甲苷) has been identified as a key compound influencing cardiac function While its full mechanism is not yet fully elucidated, current evidence suggests that Astragaloside IV is able to inhibit the activity of myocardial sodium-potassium-ATPase[12], improve myocardial energy metabolism[13], as well as promote recovery in Ca2+-pump function of the sarcoplasmic reticulum (SR)[14], overall improving the systolic and diastolic functions of the heart without increasing the oxygen consumption of the myocardium[15]. Research by Lin et.al has also supported existing findings indicating that Astragaloside IV alleviates oxidative stress, increases the production of nitric oxide (NO) and cyclic guanosine phosphate (cGMP) in the myocardium, and improves diastolic dysfunction[16]. A clinical trial involving patients with acute myocardial infarction and subsequent cardiogenic shock compared the use of Astragalus extract in combination with standard treatment procedures (oxygen supplementation, metaraminol, norepinephrine, thrombolytic therapy etc.), to just standard treatment procedures. It was observed that the treatment group that received 50ml of intravenous Astragalus extract (10ml being equivalent to 20mg of raw herb) experienced a greater increase in amplitude of heart contractions, increase of the cardiac output, and rise in blood pressure, restoring cardiac function to a greater extent than patients who were not treated with Astragalus extract[17].

Comparatively, the anti-hypertensive effects of Astragalus membranaceous is better understood and its mechanism of action has been widely researched. Animal studies by Wu et.al have shown oral administration of Astragalus membranaceous extract is able to inhibit angiotensin-converting enzyme (ACE) activities in a dose-dependent manner, and so reduce systolic blood pressure[18]. Proteomic analysis revealed that AM-1 (LVPPHA), a gastrointestinal enzyme-resistant peptide was the main active agent in inhibiting ACE activities, and Wu et.al went on to conclude that the ACE inhibitory effect of AM

and the presence of ACE inhibitory phytopeptide in AME supported the ethnomedical use of AM on hypertension[18].

As such, Astragalus membranaceous appears to have a dual function on blood pressure, making it an understandable concern when used on patients with hypertension. On one hand, there is the possibility of it raising the blood pressure of individuals who already have issues controlling their high blood pressure. On the other hand, it could cause blood pressure to drop too low in individuals who are already on hypertensive medication.

Examination of evidence

A network pharmacology study by graduate student Chen Jia Qi from Beijing University of Chinese Medicine examined the use of TCM herbs in the treatment of patients with hypertensive intracerebral hemorrhage (HICH). Her research included 343 prescriptions and revealed that the top 6 traditional Chinese medicines in terms of usage frequency were: Astragalus membranaceus (黄芪), Glycyrrhiza uralensis (甘草), Wolfiporia cocos (茯苓), Tangerine peel (陈皮), Pinellia ternata (半夏) and Angelica sinensis (当归)[19]. The study primarily focused on the choice of herbs used and their active compounds and mechanism of actions, and hence there was no mention of safety and efficacy. To look at the safety and efficacy of Astragalus membranaceous, we examined a few clinical trials, most of which were conducted in China where Chinese Medicine is used alongside Western Medication as part of standard healthcare.

Li et.al compared the effect of Astragalus membranaceous in post-menopausal hypertensive women with metabolic syndrome and Asymptomatic Left Ventricular Diastolic Dysfunction[20]. The three-arm trial compared conventional treatment with Astragalus membranaceous at 5g/day and 10g/day dose (herb was administered in the form of oral capsule). The aim of the trial was to observe the effects of Astragalus membranaceous on improving ventricular function. Other than showing the safety of Astragalus membranaceous in hypertension patients with metabolic syndrome, it also shows that a minimum dose is required for there to be any statistically significant difference in efficacy in terms of improvement of ventricular function as only the group with a daily dose of 10g of AM was observed to improve more than the control group.

As TCM is often administered as a formula consisting of many drugs, we also looked at trials that involved hypertension patients taking Chinese herbal formulas comprising Astragalus membranaceous.

In fact, some commonly used TCM formulas e.g. Niuhuang Jiangya Preparation (牛黄降压片) are commonly used in hospitals in China to treat hypertension and these have been many studies done to substantiate its efficacy and safety[21]. Currently, some physicians face a dilemma when using herbs and formulas with a primarily "qi boosting" function, these formulas are often used to address syndrome types with a deficiency, such as Buzhongyiqi Concoction (补中益气汤) which deals with qi deficiency, Shengmani San (生脉散) which deals with qi and yin deficiency, and Buyanghuanwu Concoction (补阳还五汤) which targets blood and qi deficiency that causes blood stagnation22. The concern is that such nourishing formulas would cause a rise in blood pressure when used on patients with pre-existing hypertension, hence we decided to look into clinical studies involving hypertensive patients who were prescribed nourishing herbal formula with a "qi boosting" function.

A meta-analysis by Song and Zhuang looked at 5 clinical trials comparing conventional western medication against western medication with Buzhongyiqi Concoction[23] in the treatment of hypertension. Although there was no proper reporting of adverse events or dropout rates, the overall safety of and efficacy of Buzhongyiqi Concoction combined with conventional western treatment was acceptable in terms of treating hypertension and reducing elevated blood pressure.

There were studies that used high dosage of Astragalus beyond the quantity recommended by most clinical guidelines and textbooks. The clinical trial performed by Li and Li (2019) observed the effects of Buyang Huanwu with Shengmai Granules (补阳还五汤联合生脉散颗粒) on patients with Hypertensive Carotid Atherosclerosis, and the formula included the equivalent of 60g/day of Astragalus membranaceous with a treatment duration of 8 weeks24. Luo's 2018 trial studying the effect of Yiqi Huoxue Tongluo Concoction (益气活血通络汤) combined with conventional western medicine for seniors aged 60-78 with Primary Hypertension used 50g/day of Astragalus membranaceous[25]. These dosages significantly exceed the common clinical range of 9 – 30g/day, raising questions about long-term safety and tolerability. Both Li and Luo's trials used a formula comprising mainly herbs for improving circulation or blood and qi in the meridians, and was taken by oral administration. Despite the high quantity of Astragalus membranaceous consumed daily, Luo's study reported that there were no adverse events observed for the 1 month treatment duration and blood pressure in the treatment group decreased to a greater extent than the control group. Li and Li's paper did not

include adverse events reporting.

Although uncommon in clinical practice, research using Astragalus membranaceous as a single agent might provide more conclusive evidence about the safety and efficacy of the herb. Jiang et.al. conducted a comparative study of Astragalus Membranaceous in combination with conventional antihypertensive therapy versus conventional therapy alone among hypertensive patients. The study indicated that although both groups did not have any significant difference in the change in blood pressure before and after treatment, triglyceride levels in patients who took Astragalus Membranaceous improved, and there were no adverse effects observed, and safety markers (liver, kidney function etc.) remained within healthy levels[26]. Zheng et.al performed a study with Astragalus membranaceous granules as well, with the focus on observing the atherosclerosis index of hypertensive patients. Zheng's study also indicated similar improvement in blood pressure in patients who took Astragalus membranaceous granules but neglected to report on adverse events[27].

There has been much research involving Astragalus membranaceous in the treatment of kidney disease , an example being Zhang et.al's review which looked at 66 trials involving mostly Astragalus membranaceous extract in the form of intravenous injection, with a dosage of between 20-60ml daily (40 mL being the most common dose), treated for 2 – 12 weeks (average was 4 weeks).There was no indication that the herb does not cause any significant effect on the blood pressure of patients as compared to those on ACEi or ARBs alone28. In terms of safety concerns, only 20 studies of the review included a report on adverse events, of which fifteen studies reported no AEs during the treatment period. Based on the remaining five studies, common AEs were dry cough, sCr elevation of more than 30% from baseline, and dizziness. Three cases of angioedema and a case of hyperkalemia were observed in two studies. As AEs were evenly observed in both groups, and abated spontaneously without any intervention, Zhang et.al concluded that Astragalus membranaceous did not pose any safety issues to patients with DKD taking ACEi or ARBs.

Concluding remarks

A commonality among the clinical trials conducted was the lack of blinding, absence of placebo, lack of adverse events reporting, and the possibility of biasness, especially in reporting outcomes. Although blood pressure is an objective variable and while unlikely to be influenced by participants' biasedness, it is affected to a certain extent by negative emotions [29,30] which could come about due to the perception of being denied a better treatment. While these factors do suggest that the strength of evidence for the efficacy of Astragalus membranaceous in blood pressure modulation may be weaker than what results indicate, the safety aspect, particularly concerns about blood pressure going out of control (going too high, or dropping too low), seem to be unfounded. None of the reviewed studies reported worsening of hypertension or episodes of hypotension attributable to Astragalus membranaceous. We would like to highlight that all patients were on their regular antihypertensives and did not stop their medication at any point of their trial participation. Nonetheless, while current evidence suggests that Astragalus membranaceous is generally safe in patients with controlled hypertension, well-designed randomized controlled trials with proper adverse event reporting are needed to confirm its efficacy and clarify dosing thresholds.

【References】

1. Shimizu Y. Hypertension[EB/OL]. World Health Organization, 2023-03-16.
2. Carretero O A, Oparil S. Essential hypertension. Part I: Definition and etiology[J]. Circulation, 2000, 101(3): 329 – 335.
3. Iqbal A M,Jamal S F.Essential Hypertension[EB/OL]. Treasure Island (FL): StatPearls Publishing; 2023-07-20 [2025-07-18].
4. Whelton P K, Carey R M, Aronow W S, et al. 2017ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNAGuideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines[J]. Circulation, 2018, 138(17): e484 – e594.
5. Whelton PK, Carey RM, Aronow WS, et.al. 2018 ESC/ESH Guidelines for the management of arterial hypertension: The Task Force for the management of arterial hypertension of the European Society of Cardiology and the European Society of Hypertension. Journal of Hypertension.2018,36(10):1953-2041.
6. Rapsomaniki E, Timmis A, George J, et.al. Blood pressure and incidence of twelve cardiovascular diseases: lifetime risks, healthy life-years lost, and age-specific associations in 1.25 million people. Lancet. 2014,383(9932):1899-911.

7. 中华中医药学会.中医内科常见病诊疗指南·西医疾病部分[C].北京:中国中医药出版社，2008: 63－66.
8. 汪艳丽.正确认识高血压，中医防治有妙招[EB/OL].北京：北京市卫生健康委员会，2024-01-04.
9. Liu CT, Hung IL, Hsu CY, et.al. Chinese Herbal Medicine Reduces the Risk of Heart Failure in Hypertensive Patients: A Nationwide, Retrospective, Cohort Study. Frontiers in Cardiovascular Medicine, Sec: Hypertension. 2022, 9.
10. 全国中草药汇编编写组. 全国中草药汇编(下册)[M]. 第2版. 北京: 人民卫生出版社, 2000: 1480.
11. 中华人民共和国药典：2020 年版·四部［M］. 北京：中国医药科技出版社，2020.5.
12. Zhang J, Wu C, Gao L, et.al. Astragaloside IV derived from Astragalus membranaceus: A research review on the pharmacological effects. Adv Pharmacol. 2020, 87: 89-112.
13. Zang Y, Wan J, Zhang Z, et.al. An updated role of astragaloside IV in heart failure. Biomedicine & Pharmacotherapy. 2020, 126: 110012.
14. Xu XL, Ji H, Gu SY, et.al. Modification of alterations in cardiac function and sarcoplasmic reticulum by astragaloside IV in myocardial injury in vivo. Eur J Pharmacol. 2007, 568: 203-212.
15. Chen H, Zheng PL, Dai JY, et al. Influence of Astragaloside IV (ASIV) on systolic and diastolic function in dogs with acute heart failure[J]. Chinese Pharmacological Bulletin, 2005, 21(11): 1534－1535.
16. Lin X, Wang Q, Sun S, et al. Astragaloside IV promotes the eNOS/NO/cGMP pathway and improves left ventricular diastolic function in rats with metabolic syndrome[J]. Journal of International Medical Research, 2020, 48(1): 300060519826848.
17. 米志勇，李永新，张代碧.黄芪注射液治疗急性心肌梗死并发心源性休克疗效观察[J]. 中国中医急症, 2009, (10): 1621+1647.
18. Wu JS, Li JM, Lo HY, et.al. Anti-hypertensive and angiotensin-converting enzyme inhibitory effects of Radix Astragali and its bioactive peptide AM-1. Journal of Ethnopharmacology. 2020, 254:112724.
19. 陈嘉琪.基于数据挖掘和网络药理学探讨高血压性脑出血方药规律和作用机制[D].北京：北京中医药大学，2021.
20. LiNY, YuH, LiXL, et al. Astragalus Membranaceus Improving Asymptomatic Left Ventricular Diastolic Dysfunction in Postmenopausal Hypertensive Women with Metabolic Syndrome: A Prospective, Open-Labeled, Randomized Controlled Trial. Chin Med J (Engl). 2018;131(5): 516-526.
21. Wang H, Liu C, Zhai J, et.al. Niuhuang Jiangya Preparation (a Traditional Chinese Patent Medicine) for Essential Hypertension: A Systematic Review. Complementary Therapies in Medicine. 2017, 31:90-99.
22. 李冀，连建伟.全国中医药行业高等教育"十三五"规划教材方剂学（第4版）[M].北京：中国中医药出版社，2016-08.
23. 宋传景，庄欣.补中益气汤对气虚型高血压病降压作用的Meta分析[J]. 湖南中医杂志, 2018, (02): 118－119.
24. 李猛，李芳.补阳还五汤联合生脉散颗粒对高血压颈动脉粥样硬化患者临床疗效观察[J]. 山西医药杂志, 2019, (01): 36－38.
25. 骆淑斐.益气活血通络汤联合西药治疗老年原发性高血压临床研究[J]. 新中医, 2018, (10): 59－61.
26. 姜岳, 肖燕兰, 吴春艳, 等. 黄芪颗粒治疗高血压患者的社区随访观察[J]. 中国中医药现代远程教育, 2014, (12): 153－155.
27. 郑浪花，林慧，曾活.黄芪颗粒对原发性高血压动态动脉硬化指数的影响[J].中国当代医药, 2016, (01): 182－184.
28. Zhang L, Shergis JL, Yang L et.al Astragalus membranaceus (Huang Qi) as adjunctive therapy for diabetic kidney disease: An updated systematic review and meta-analysis. Journal of Ethnopharmacology. 2019, 239: 111921.
29. Joseph NT, Chow EC, Peterson LM, et.al. What Can We Learn From More Than 140,000 Moments of Ecological Momentary Assessment-Assessed Negative Emotion and Ambulatory Blood Pressure? A Systematic Review and Meta-Analysis. Psychosom Med. 2021，83(7): 746-755.
30. Gavrilova L, Zawadzki MJ. Testing the Associations Between State and Trait Anxiety, Anger, Sadness, and Ambulatory Blood Pressure and Whether Race Impacts These Relationships. Ann Behav Med. 2023，57(1): 38-49.

Usage of iodine-containing herbs in the treatment of goiters

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Introduction

Goiter refers to an enlargement or abnormal swelling of the thyroid glands. It is associated with a variety of diseases such as iodine deficiency, hyperthyroidism, hypothyroidism, inflammation, and autoimmune disorders. While some goiters, such as pregnancy related goiters, can resolve with minimal intervention, some can remain persistent for prolonged periods, or even increase in size. Often, goiters are the impetus for patients to seek medical treatment due to its obvious presentation, and many are then later diagnosed with underlying thyroid disorders[1].

In cases of euthyroid goiters, patients are not actively treated with western interventions unless otherwise indicated with obstructive presentations, and are typically advised to monitor their conditions with routine follow-ups. Even in hypothyroid or hyperthyroid patients, the goal of western treatment is to restore thyroid function to normal levels, with little focus placed on resolving the goiter[2,3]. Hence, be it for cosmetic or medical concerns, many patients with goiters have turned to traditional Chinese medicine for solutions.

However, there have been adverse case reports of patients with aggravated thyroid disorders after consumption of traditional Chinese medicine products. One example is a case study presented by Karsten Mussigg et. al (2006)[4]. The patient in question had been previously diagnosed with multinodular goiter, with normal levels of thyroid hormones, negative antibodies and absence of clinical symptoms. After 4 weeks of consuming traditional Chinese medicine, the patient developed iodine-induced thyrotoxicosis which resolved after stopping the mentioned traditional Chinese medicine and receiving anti-thyroid drug therapy. A closer investigation revealed that the aforementioned prescription was a famous concoction catered to goiters traditionally, known as Hai Zao Yu Hu Tang (海藻玉壶汤). The formula contained herbs rich in iodine, and her calculated daily dose of iodine (estimated 580 to 990) exceeded the World Health Organization (WHO) recommended limit of 150μg[5], highlighting the issue of drug safety when administering high iodine content herbs to thyroid patients.

Most normal healthy individuals are able to adapt to excess iodine intake though the thyroid glands' intrinsic autoregulatory mechanisms. However, patients with underlying thyroid disorder may fail to respond accordingly, resulting in either hypothyroidism (due to failure to escape from Wolff-Chaikoff effect) or hyperthyroidism (due to the Jod Baselow effect)[6,7]. The occurrence of these two opposite responses is believed to be due to autoregulatory differences in the sensitivity to iodide-induced turn-off in hormone biosynthesis[7].

Given the concerns of iodine controversy in the management of thyroid disorders and various reported adverse case studies, it is of utmost importance and relevance to evaluate the safety of iodine-rich traditional Chinese medicine in treatment of goiters.

TCM understanding

Traditionally, goiters belong to the broad classification of Ying Disease (瘿病), which broadly refers to all diseases presenting with thyroid swelling, including but not limited to simple goiters, nodular goiters, thyroiditis, and thyroid cancer. Traditional Chinese medicine further differentiate these diseases into four subcategories: 1. Qi Ying (气瘿), similar to the description of simple goiters; 2. Rou Ying (肉瘿), similar to benign nodular goiters and thyroid cysts; 3. Ying Yong (瘿痈), analogous to acute and subacute thyroiditis; and 4. Shi Ying (石瘿), referring to thyroid cancer[8].

Treatment of goiters dates way back in history. The Handbook of Prescriptions for Emergencies (《肘后备急方》), written by Ge Hong (葛洪) in the third century, is the earliest publication that records the use of iodine-rich herbs like Sargassum pallidum (海藻) and Thallus laminariae/Thallus eckloniae (昆布) in the management of goiters[9]. A data-mining research by Liu et.al (2019) on common formulas traditionally used for goiter treatment listed the common herbs used in ancient times. This included Thallus laminariae/Thallus eckloniae 昆布 (63.5%), Sargassum pallidum/Sargassum fusiforme 海藻 (67.3%), Spica Prunellae 夏枯草 (26.0%), Concha ostreae 牡蛎 (22.1%), Angelica sinensis 当归 (19.2%), Fritillaria thunbergii 浙贝母 (15.4%), Rehmannia glutinosa 生地黄 (14.4%), Dioscorea bulbifera 黄药子 (11.55%)[10]. A separate research examined a total of 104 formulas, and the most

commonly used formulas were Hai Zao Yu Hu Tang (海藻玉壶汤), Huo Xue Xiao Ying Tang (活血消瘿汤), Shi Quan Liu Qi Tang (十全流气汤), and Si Hai Shu Yu Wan (四海舒郁丸)[11]. Unsurprisingly, these formulas contained substantial amounts of iodine-rich herbs, and are therefore of concern.

Experimental investigations carried out by Gao Tian Shu revealed the iodine content of the various common herbs used in goiter management which are published in his book "Practical Chinese and Western Medicine Thyroid Diseases" or《实用中西医甲状腺病学》. Based on results seen in Table 1, we can see that iodine content varies in different samples of herbs, hence, it may be difficult to estimate the iodine content in a prescription, especially taking into consideration that there may be multiple Iodine containing herbs in a single prescription.

Iodine content in raw herbs	Sample 1 (ug/kg)	Sample 2 (ug/kg)	Sample 3 (ug/kg)	Average (ug/kg)
当归 Angelica sinensis	1.25	1.73	1.76	1.58
生地黄 Rehmannia glutinosa	0.07	0.12	0.11	0.10
夏枯草 Spica prunellae	35.48	42.37	37.24	38.43
黄药子 Dioscorea bulbifera	4.21	5.08	4.78	4.69
牡蛎 Concha ostreae	6.98	9.27	8.59	8.28
浙贝母 Fritillaria thunbergii	1.87	2.34	2.04	2.09
海藻 Sargassum pallidum/ Sargassum fusiforme	643.25	701.65	702.48	682.46
昆布 Thallus laminariae/ Thallus eckloniae	756.38	825.35	802.34	794.69

Table 1 Practical Chinese and Western Medicine Thyroid Diseases or《实用中西医甲状腺病学》 by Gao Tian Shu (高天舒)

Liu's review also showed that the modern usage of traditional Chinese herbs has seen a shift in herbal prescriptions when dealing with goiters. In the current practices, common herbs, in order of popularity, are Spica prunellae (夏枯草), Concha ostreae (牡蛎), Fritillaria thunbergii (浙贝母), Scrophularia ningpoensis (玄参), Angelica sinensis (当归), Paeoniae alba (白芍), Sargassum pallidum (海藻), Poria cocos (茯苓), Bupleurum chinense/ Bupleurum scorzonerifolium (柴胡), Rehmannia glutinosa (生地)[5]. As compared to the past, current practices have significantly reduced the usage of iodine-rich herbs. Reasons underlying the change are multifactorial, be it due to an increase in awareness of possible complications of excess iodine or simply due to a change in disease understanding and etiology. However, before we delve further into the safety of iodine-rich herbs in management of goiters, we will explain a little on the history of traditional Chinese medicine in this aspect.

In the past, most cases of goiters in China were likely due to iodine deficiency[12]. This coincides with the observations of past traditional Chinese medicine practitioners, who discovered that people living in inland and mountainous areas were more likely to develop goiters. This was published in ancient classical texts such as "General Treatise on Causes and Manifestations of All Diseases"《诸病源候论》in 610 A.D. and in more recent medical books such as《杂病源流犀烛》[13]. As seafood is an important source of diet iodine, people living away from coasts tend to be iodine deficient, and was therefore the most common cause of goiters then[12]. However, back in those times, there was no concept of iodine deficiency. Traditional Chinese medicine believes that goiters are due to stagnation of phlegm and Qi, which progresses to form a solid mass[8]. Therefore, herbs that regulate Qi, disperse phlegm, and resolve solid masses are employed accordingly for treatment. Of which, Sargassum pallidum (海藻), Thallus laminariae/Thallus eckloniae (昆布), Spica prunellae (夏枯草), Concha ostreae (牡蛎) and Fritillaria thunbergii (浙贝母) are traditionally used and proven to be effective after centuries of clinical practice.

However, after the introduction of iodized salt in mainland China in the 1950s, rates of iodine deficiency fell drastically[12]. and the usage of iodine-rich herbs became a point of contention even among traditional Chinese medicine practitioners Currently, there are four major schools of thought concerning the use of iodine rich herbs in treating thyroid conditions. The first school believes in keeping with tradition and advocates the use of iodine-containing herbs and established formulas, believing that their proven clinical efficacy in the past is a good basis for continual usage even in the modern times. However, the second is in line with western practice in this aspect, completely rejecting the use of iodine-rich herbs, unless patients show clear evidence of iodine deficiency. They believe that no iodine-rich herbs should be used as the iodine content is not regulated and can easily exceed the recommended daily intake requirement. The third point of view promotes the use of herbs with lower iodine content, which allows traditional Chinese medicine practitioners to prescribe herbs according to traditional principles while minimizing the risk of iodine poisoning. The last group adheres to the fundamental basis of traditional Chinese medicine and

upholds the importance of syndrome differentiation. From their perspective, in the cases of patients presenting with symptoms that indicate the traditional etiology of phlegm and Qi stagnation, appropriate herbs backed with logical reasoning can be prescribed regardless of iodine content [14,15].

Concerns from the Scientific Point of View

From the modern medicine point of view, various evidence have pointed to the fact that excess iodine intake can aggravate conditions and lead to disruptions in thyroid functions[6,16].Iodine excess disorder was first brought to international attention in the 19th century, when iodine-induced goiter was first described in Japan through a large epidemiological study conducted between 1960 and 1964 in coastal Hokkaido[17]. Due to their cultural diet of high seaweed intake, the coastal population consumed on average 20mg of iodine per day. The local adult goiter rate was 9%, compared with 1% in an inland community. Another recent study supported the hypothesis by recording a high median thyroid volume of 4.9ml2 in school-age children living in coastal Hokkaido, as compared to 2.9mL2 in noncoastal Hokkaido18. Lu et al. (2016) investigated the reversibility of iodine-induced goiter following the initiation of a Chinese policy to remove iodized salt from regions with naturally high iodine concentration in water sources. After discontinuation of iodized salt, goiter prevalence dropped drastically[19]. With this problem in mind, we proceed to do a literature search, to find out the current evidence available.

Evidence from current literature

In the next section, we will look at Goiters associated with either euthyroidism, hypothyroidism, or hyperthyroidism. The focus here will not be on pathogenesis, but rather, we will be looking at the usage of herbs (including patterns of usage of Iodine-rich herbs) in these 3 types of goiters.

Euthyroid Goiters and Iodine-Rich Herbs

Many clinical trials have shown that use of iodine-rich formulas is effective in reducing goiter size, with or without the combination of Western intervention, and no severe adverse events have been reported. One example is the study by Yang and Lu (2017) which compared two different TCM herbal formulas (both Xing Qi Hua Ying Tang and Hai Zao Yu Hu Tang contained iodine rich herbs) in treating patients with either multi nodular or diffuse goiter[21]. In this study, both groups of patients had normal levels of TSH, free T4 and free T3 before and after treatment, and both groups experienced a reduction in goiter size. Another study involving TCM was done by Zhang et.al (2017), comparing the effect of Xia Ku Cao Granules (夏枯草颗粒) to an herbal decoction containing iodine rich herbs such as Sargassum pallidum (海藻) and Thallus laminariae/Thallus eckloniae (昆布)[21]. This research found that as compared to using Xia Ku Cao Granules, the patients who took the herbal formula experienced more pronounced reduction in goiter size, although levels of FT3, FT4 and TSH changed after treatment, they were still within the clinically acceptable range.

Hu et.al (2002) did a study investigating the effect of Jia Zhong Fang （甲肿方）on benign nontoxic goiter as compared to levothyroxine on reducing goiter size[22]. The study measured goiter size via ultrasound as well as physical palpation, and found that goiter size decreased more significantly in patients who took Jia Zhong Fang, at the same time, change in thyroid hormones (T3, T4, TSH, FT3) levels were not as significant as patients who took levothyroxine. This study, however, had patients taking the Jia Zhong Fang for varying durations, from 2 to 6 months, and it was not explained clearly if this had any effect on the change in thyroid hormone levels.

Hyperthyroid Goiters and Iodine Rich Herbs

Patients with hyperthyroidism often present with symptoms like increased metabolism, rapid heart rate, irritability, insomnia, low heat tolerance, excessive sweating and tremors[23]. In traditional Chinese school of thoughts, these patients generally belong to syndromes such as Hyperactive Liver Fire (肝火旺盛）, Yin deficiency and Yang excess (阴虚阳亢), and Qi and Yin deficiency (气阴两虚)[24]. From a TCM perspective, the direction of treatment revolves around removing excess heat, tonifying the liver, and nourishing Yin[8,25], and herbs selected specifically for the purpose of transforming phlegm, softening masses, and dissipating nodules in this case include Concha ostreae (牡蛎) and Fritillaria thunbergii (浙贝母) . Herbs such as Spica prunellea (夏枯草), Scrophularia ningpoensis (玄参), Angelica sinensis (当归) and Paeoniae Alba (白芍)are also frequently used in clinical settings and trials in treatment of hyperthyroid goiters, and are also commonly seen in ancient and current publications[25]. One example is a clinical trial by Li et. al (2011), where the effectiveness of thiamazole is compared to a Chinese herbal concoction containing Concha ostreae (牡蛎), Spica prunellea (夏枯草), Gastrodia elata (天麻), Uncaria rhynchophylla (钩藤), and Concha haliotidis (石决明)[26]. Results revealed that the herbal group displayed similar improvement in thyroid functions and thyroid sizes as conventional group, but reported significantly less adverse events. This primarily indicates that usage of Concha ostreae (牡蛎) and Spica prunellea (夏枯草) are safe and efficacious, despite its iodine content.

Many clinical trials have been done on hyperthyroid patients with the aim of reducing goiter size. An example is Tian et.al (2018) which looked at using Goiter Dispersion

Formula (did not use iodine rich herbs but had herbs with moderate levels of iodine e.g. Spica prunellea (夏枯草), Scrophularia ningpoensis (玄参), and Angelica sinensis (当归)[27]. Tian et.al found that Goiter Dispersion Formula significantly reduced goiter size in patients and improved the treatment outcomes of antithyroid drug in hyperthyroidism patients with neurologic manifestations of Graves' disease by modulating IL-2, IL-8, and IL1727.

A clinical trial by Yang et.al (2017) which used Yingliu mixture(瘿瘤合剂), had similar findings[28]. Yang's research showed that in addition to reducing goiter size, Yingliu mixture combined with methimazole could reduce TNF-α and IL-10, increase CD4+ CD25+, improve thyroid function, reduce thyroid autoantibodies, and improve the clinical symptoms in patients with GD, and the efficacy was shown to be better than that obtained by the use of methimazole alone.

A Cochrane Review also found results that supported the use of Chinese herbal medicines for treating hyperthyroidism[29]. Goiter size was not the main treatment outcome evaluated in this paper which was focused on safety (determined by monitoring adverse events) and efficacy (measured via thyroid function screening and patients' symptomatic relief). Compared to using antithyroid drugs alone, the results showed that Chinese herbal medicines combined with antithyroid drugs may offer benefits in lowering relapse rates, reducing the incidence of adverse effects, relieving symptoms, improving thyroid antibody status and thyroid function.

However, there have been cases of recurrence and even aggravation of hyperthyroidism after weeks of iodine-rich herbal consumption, despite the initial remission[14]. As mentioned before, patients with existing dysregulation of thyroid functions tend to be more susceptible to changes in iodine intake, which are otherwise well-tolerated in healthy individuals. Therefore, caution is advised when prescribing iodine-rich herbs to hyperthyroid patients.

Hypothyroid Goiters and Iodine Rich Herbs

Hypothyroid patients typically present with symptoms such as cold intolerance, puffiness, decreased sweating, and skin changes, in some cases, patients also may present with decreased metabolism, fatigue, constipation, weight gain, etc[30]. According to TCM syndrome differentiation, patients with these symptoms are categorized as Yang deficiency[31]. In the case of hypothyroid goiters caused by Hashimoto's thyroiditis, an analysis by Cheng et.al revealed that patients largely belong to the Spleen and Kidney Yang deficiency syndrome (脾肾阳虚) and prescriptions commonly include herbs that were warming and invigorating to revitalize the Spleen and Kidney Yang, and those herbs did not fall into the category of herbs known to have high iodine content[32].

However, there are still clinical practices that include small amounts of iodine-rich herbs, to increase the effects of resolving goiters. For instance, Yang and Hou (2020) used Ruanjianxiaoying granules in combination with levothyroxine sodium tablets for treatment of Hashimoto's thyroiditis with hypothyroidism[33]. The formulation used included iodine-rich herbs such as Sargassum pallidum (海藻), Thallus laminariae/Thallus eckloniae (昆布), and Spica prunellea (夏枯草). Results showed that goiter size decreased more significantly in treatment group than in control group taking levothyroxine sodium tablets alone. Thyroid hormone levels (TSH and FT4) and antibody levels (TPOAb and TgAb) showed significant improvement in treatment group as compared to control group. No adverse events have been reported.

The above-mentioned examples do not serve to advocate specifically for the use of iodine rich herbs in hypothyroid patients, nor do they serve as evidence that high iodine intake is safe for patients with hypothyroid conditions. In fact, multiple research has shown that high iodine intake is strongly associated with autoimmune thyroiditis in China[34,35]. Research indicates that high iodine intake can induce thyroid disease in people with autoimmune diseases by changing the expression of HLA-II, or by oxidative damage of thyroid cells, thus causing loss of functional thyroid cells. Reduction of iodine to normal intake levels can restore normal TSH levels[34].

Discussion

Most papers that we looked at had a designated TCM treatment method and herbal prescription that took into consideration syndrome differentiation, and also include herbs for resolving goiter mass. Dosage was prescribed according to conventional standards, and as such, we did not encounter any case where iodine-rich herbs were used in high-dosage. There were no cases of thyroid function impairment that arose during the course of treatment, adverse events were minimal and comparable or less than observed in patients who were on conventional western medicine only, and many were able to see a more significant reduction in goiter size than patients on western medicine only.

One question that arose from this research was: How do these herbs resolve goiters? Based on the patterns of herb use in various types of goiters, being "iodine-rich" is not a pre-requisite for a TCM formula to be useful in resolving goiters. Natural products consist of many active biomolecules working together in synergy to assert their pharmacological effects in the body. For instance, Sargassum pallidum contains various active compounds including polysaccharides (such as SP polysaccharides), and flavonoids (such as baicalein and quercetin 3-O-glucuronide), which demonstrate anti-tumour, anti-oxidative, immunoregulatory effects etc[36]. Song et.al (2011)

suggest that various active compounds in Sargassum pallidum may contribute towards its immunomodulatory effect, allowing it to reverse serum T3, T4, TgAb and TPOAb levels, impacting histopathological changes and TRAIL protein expression as well as inhibit thyroid growth induced by excessive iodine intake and improve immune function[37].

A preliminary research done by Li et. al (2011) identified 8 potential lymphocyte proteins that showed different expressions in hyperthyroid patients when compared to healthy individuals[26]. These lymphocyte proteins such as Profilin-2, aldehyde dehydrogenase 1A1, heat shock protein-27, etc., were found to play a role in the development of hyperthyroidism. After treatment with Chinese herbal formula containing Gastrodia elata (天麻), Uncaria rhynchophylla (钩藤), Concha haliotidis (石决明), Concha ostreae (牡蛎), and Spica prunellea (夏枯草), it was found that the quantities of these proteins were significantly changed. Profilin-2 was upregulated while aldehyde dehydrogenase 1A1, heat shock protein 27, superoxide dismutase, annexin A1, rho-GDP separation inhibition factor, peroxiredoxin-II, endoplasmic reticulum protein 28 were down regulated. Although the results remain far from elucidating the exact mechanism of action of these complex compounds, it is a good starter to shine light into the pharmacological pathways of Chinese herbs in the management of goiters.

Conclusion

Given the current evidence available, the efficacy of these iodine-rich herbs appears to be a promising approach for goiter management, whether it be Euthyroid Goiters, Hyperthyroid Goiters, or Hypothyroid Goiters, with existing clinical trials showing that such herbs have a relatively safe profile, so long as they are consumed based on licensed practitioners' advices and within the safe dosage indicated by Pharmacopoeia of the People's Republic of China 《中华人民共和国药典》. Most of such research had a limited treatment duration of 3 months without any post-treatment follow-up. As we are unable to determine the long-term effect of prolonged iodine-rich herb usage based on literature published, we would hence strongly recommend regular follow-ups with licensed TCM practitioners and regular monitoring of thyroid function. All literature reviewed had patients who were clearly diagnosed and had undergone thorough thyroid function screening. Although TCM practice emphasizes treatment according to syndrome differentiation, it is still important for proper screening and diagnosis of thyroid conditions to eliminate the possibility of thyroid cancer or other red flags. This will prevent the risk of delaying essential treatment.

【References】

1. Wallace R. Common Thyroid Gland Diseases and Problems to Watch For[EB/OL]. Healthline, 2018-08-20[2020-08-20].https://www.healthline.com/health/common-thyroid-disorders.websiteseo.qinyanai.com
2. Orlander P. Hypothyroidism Treatment & Management: Approach Considerations, Hypothyroidism in Pregnancy, Subclinical Hypothyroidism[EB/OL]. Medscape, 2020-02-06. https://emedicine.medscape.com/article/122393-treatment.
3. Mathew P, Rawla P. Hyperthyroidism[EB/OL]. PubMed, 2023-03-19[2025-07-23]. https://www.ncbi.nlm.nih.gov/books/NBK537053/.websiteseo.qinyanai.com
4. Mussig K, Thamer C, Bares R, et al. Iodine-Induced Thyrotoxicosis After Ingestion of Kelp-Containing Tea[J]. J Gen Intern Med, 2006, 21(11): 11 – 14.
5. Lee SL, Ananthakrishnan S, Pearce EN. Iodine Deficiency Guidelines: Guidelines Summary, Iodine Deficiency Prevention During Pregnancy[EB/OL]. Medscape, 2024-12-12. https://emedicine.medscape.com/article/122714-guidelines.
6. Katagiri R, Yuan X, Kobayashi S, et al. Effect of excess iodine intake on thyroid diseases in different populations: A systematic review and meta-analyses including observational studies[J]. PLoS One, 2017, 12(3): e0173722.
7. Fradkin JE, Wolff J. Iodide-induced thyrotoxicosis[J]. Medicine, 1983, 62(1): 1 – 20.
8. 吴勉华, 王新月, 主编. 中医内科学: 瘿病[M]. 3版. 北京: 中国中医药出版社, 2012.
9. 葛洪. 肘后备急方[M]. 326 – 341 B.C.
10. 刘旭, 田娜, 喻嵘, 等. 近现代医家治疗瘿病组方用药规律分析[J].中国中医药现代远程教育, 2019, 17(12): 40 – 43.
11. 崔鹏.不同碘含量复方治疗瘿病的实验研究及临床经验总结[D].沈阳: 辽宁中医药大学,2007.
12. Liang Z, Xu C, Luo YJ. Association of iodized salt with goiter prevalence in Chinese populations: A continuity analysis over time[J]. Mil Med Res, 2017, 4: 8.
13. 沈金鳌. 杂病源流犀烛[M]. 北京: 中国中医药出版社, 1773.
14. 何莉莎, 逄冰, 赵林华, 仝小林.含碘中药在甲状腺疾病中的应用概况[J].中医杂志, 2015, 56(9): 761 – 764.
15. 程相稳, 张广德, 魏子孝.含碘中药在甲状腺功能亢进症中的应用评述[J].中华中医药杂志, 2017, 32(9): 3901 – 3903.
16. Chen W, Zhang Y, Hao Y, et al. Adverse effects on thyroid of Chinese children exposed to long-term iodine excess: Optimal and safe tolerable upper intake levels of iodine for 7- to 14-y-old children[J]. Am J Clin Nutr, 2018, 107(5): 780 – 788.

17. Suzuki H, Higuchi T, Sawa K, et al. "Endemic coast goiter" in Hokkaido, Japan[J]. Acta Endocrinol (Copenh), 1965, 50: 50 – 61.
18. Zimmermann MB, Ito Y, Hess SY, et al. High thyroid volume in children with excess dietary iodine intakes[J]. Am J Clin Nutr, 2005, 81: 840 – 844.
19. Lu S, Xie L, Xu D, et al. Effect of reducing iodine excess on children's goiter prevalence in areas with high iodine in drinking water[J]. Endocrine, 2016, 52: 296 – 304.
20. Yang ML, Lu B. Treatment of Goiter with Traditional Chinese Medicine Regimen Xing Qi Hua Ying Tang: A Clinical Study on 72 Patients with Multinodular and Diffuse Goiter[J]. J Altern Complement Med, 2018, 24(4): 374 – 377.
21. 张磊，吴建明，席琼.中药复方应用于单纯性甲状腺肿临床疗效观察[J].中国地方病防治杂志，2017, 32(3): 297 – 298.
22. 胡克武，李任先，赵立诚.甲肿方治疗良性非毒性甲状腺肿的疗效观察[J].广州中医药大学学报，2002, 19(2): 91 – 93.
23. Mathew P, Kaur J, Rawla P. Hyperthyroidism[EB/OL]. StatPearls, 2023-03-19[2025-01-01]. https://www.ncbi.nlm.nih.gov/books/NBK537053/. websiteseo.qinyanai.com+1qikan.ccnpub.com+1
24. 吴勉华，王新月，主编.中医内科学：瘿病[M]. 3版. 北京：中国中医药出版社, 2012.
25. 黄小敏.甲状腺机能亢进症的国家级名中医辨治规律初探. 广州: 广州中医药大学.2012.
26. Li X, Yin T, Zhong G, et.al. Herbs for calming liver and suppressing Yang in treatment of hyperthyroidism with hyperactive liver Yang; Herbal effects on lymphocyte protein expression. China Journal of Chinese Materia Medica. 2011, 36(14): 1997-2004.
27. Tian WH, Wang Y, Yang R, et.al. Effect of Goiter Dispersion Formula on Serum Cytokines in Hyperthyroidism Patients with Neurologic Manifestations of Graves' Disease: A Randomized Trial on 80 Cases. Journal of Alternative and Complementary Medicine. 2018: 1-5.
28. Yang H, Cong Y, Wu T, et.al. Clinical efficacy of Yingliu mixture combined with metimazole for treating diffuse goiter with hyperthyroidism and its impact on related cytokines. Pharm Biol. 2017, 55(1): 258-263.
29. Zeng X, Yuan Y, Wu T, et.al. Chinese herbal medicines for hyperthyroidism. Cochrane Database of Systematic Reviews. 2007, 2: CD005450.
30. Garber JR, Cobin RH, Gharib H, Hennessey JV, Klein I, Mechanick JI, Pessah-Pollack R, Singer PA, Woeber KA; American Association of Clinical Endocrinologists and American Thyroid Association Taskforce on Hypothyroidism in Adults. Clinical practice guidelines for hypothyroidism in adults: cosponsored by the American Association of Clinical Endocrinologists and the American Thyroid Association. Thyroid. 2012 Dec; 22(12):1200-35.
31. 李灿东.中医诊断学（第4版）[M]. 北京：中国中医药出版社，2016.
32. Cheng X, Wei Z, Zhang G, et al. A systematic review of combinatorial treatment with warming and invigorating drugs and levothyroxine for hypothyroidism caused by Hashimoto disease. Annals of translational medicine. 2016, 4(23): 459.
33. 杨彬婕, 侯丹.软坚消瘿颗粒联合左甲状腺素钠片治疗桥本甲状腺炎伴甲状腺功能减退临床疗效[J]. 临床军医杂志, 2020, 48(3): 293-295.
34. 单忠艳, 滕卫平, 李玉姝, 等. 碘致甲状腺功能减退症的流行病学对比研究[J].中华内分泌代谢杂志, 2001, 17(2): 11-14.
35. Du Y, Liu P, Huang X, et al. Prolonged exposure to elevated iodine levels in drinking water is associated with the occurrence of autoimmune thyroid disorders in adults: findings from a case-control study conducted in Shandong Province, China. Journal of Nutrition and Metabolism. 2025; 2025: 1510663.
36. Lei Z, Qin X, Yang Y, et.al. Recent advances of Sargassum pallidum in chemical and biological aspects. Front. Pharmacol. Sec. Ethnopharmacology. 2025，16.
37. Song XH, Zan RZ, Yu CH, et.al. Effects of modified Haizao Yuhu Decoction in experimental autoimmune thyroiditis rats. Journal of Ethnopharmacology. 2011, 135:321 – 324.
38. 中华本草.国家中医药管理局《中华本草》编委会，主编.上海: 上海科学技术出版社, 1999.
39. 解平芬. 海藻玉壶汤治疗乳腺增生症20例[J]. 江西中医药，1995(S3)：60.
40. 张文科.海藻玉壶汤治疗前列腺增生98例临床观察[J]. 甘肃中医，2000(02)：8-29.
41. Liu X, Jiang Z, Xiao Z, et.al. Meta-analysis of Chinese medicine in the treatment of adenoidal hypertrophy in children. European Archives of Oto-Rhino-Laryngology. 2019: 276.
42. 辛彩虹，高天舒，杨文学，等.富碘中药海藻对甲状腺细胞凋亡及凋亡调控基因的影响.[J]中国组织工程研究与临床康复. 2007,11(38):7613-7616.
43. 张立清.海藻玉壶汤加减治疗甲亢的临床疗效观察.[J] 内蒙古医科大学学报. 2014,36(1):59-60.
44. 时杨，高天舒，杨柳.富碘中药复方对甲亢大鼠甲状腺功能和形态的影响.[J]辽宁中医药大学学报.2009, 11(9): 186-188.
45. Cheng X, Zhang G, Wei Z. Commentary on the application of iodine-containing Chinese medicine in hyperthyroidism. CJTCMP. 2017，32(9):3901-3903.

The usage of TCM and Western medicine in the treatment of hyperuricemia and gouty arthritis

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Hyperuricemia is a condition characterized by abnormally high levels of uric acid in the blood—commonly defined as above 6 mg/dL in women and 7 mg/dL in men. It arises from either overproduction of uric acid—often driven by high-purine diets (red meat, organ meats, seafood), excessive fructose or alcohol intake, rapid cell breakdown—or reduced excretion due to kidney dysfunction, certain medications, or metabolic issues[1].

Recent data show that hyperuricemia is a common global health issue, affecting approximately 2.6 – 36% of adults worldwide[2]. In the United States, estimates based on National Health and Nutrition Examination Survey (NHANES) 2015 – 2016 indicate that about 20.2% of men and 20.0% of women had elevated serum uric acid (SUA) levels—over 47 million adults—while gout affected about 3.9% of the population[3]. Among U.S. adolescents (ages 12 – 17), recent figures (2015 – 2018) show an even higher prevalence of 32.8% overall, with hyperuricemia affecting 50.7% of males and 13.5% of females in this age group[4]. In 2021, a healthcare data survey across 12 provinces in China revealed that the age- and sex-adjusted hyperuricemia prevalence was 13.6% - 24.3% in men and 2.6% in women[5]. These figures illustrate that elevated uric acid is widespread across diverse populations.

Although most individuals have no symptoms, persistently high SUA levels could lead to uric acid crystal deposition, causing gout, kidney stones, and potentially contributing to chronic kidney disease, hypertension, insulin resistance, and cardiovascular problems[6].

In the United States, the 2015 – 2016 NHANES data reported a 3.9% gout prevalence among adults (~9.2 million people), with 5.2% in men and 2.7% in women, rising sharply with age (up to ~8.7% in those 80+)[3]. Trends from 2017 – 2018 show further increases, with an overall gout prevalence of 5.1% (~12.1 million Americans) and a concerning rise among Asian adults in the U.S., reaching 6.6% and nearly 23.6% in older Asian men[7].

Gout is a complex form of inflammatory arthritis caused by a buildup of uric acid in the blood, leading to tiny, needle-like urate crystals depositing in joints—most often the base of the big toe. These crystal deposits trigger sudden, intense attacks of pain, swelling, redness, warmth, and tenderness—often waking people in the middle of the night with the sensation that the joint is "on fire" [8]. Although gout typically comes and goes in distinct episodes, repeated untreated attacks can damage joints, form hard crystal deposits called tophi, and lead to kidney stones or impaired kidney function. Based on the different characteristics, gout can split into four stages, namely the asymptomatic hyperuricemia phase, acute gout attack, intercritical gout, and chronic tophaceous gout[9].

Given the established link between hyperuricemia and gout, and the importance of reducing SUA levels for chronic management, urate-lowering therapy (ULT) remains the cornerstone of treatment. Xanthine oxidase inhibitors (XOIs), such as allopurinol and febuxostat, are first-line treatments. Allopurinol treatment typically begins at 100 mg daily, with gradual dose increases every 2 – 4 weeks to reach target SUA levels, i.e. <6mg/dL[10].Uricosuric agents like benzbromarone and probenecid serve as second-line therapies or alternatives, while anti-inflammatory and analgesic options, including colchicine, glucocorticoids, and nonsteroidal anti-inflammatory drugs (NSAIDs), help manage symptoms[11,12]. Combination therapy is recommended when monotherapy proves ineffective.

Due to prolonged duration of therapy and given that patients may ignore the significance of long-term ULT, adherence to ULT is often poor. Hence, it leads to frequent treatment failures and high recurrence rates[13,14].

On the other hand, western medications for gout often cause side effects such as allergic reactions, gastrointestinal irritation, liver toxicity, and nephrotoxicity. Therefore, many research studies aim to identify natural compounds that lower uric acid while possessing anti-inflammatory properties. One such compound is Polydatin (PD), the primary active ingredient in the rhizome of Polygonum cuspidatum (Hu Zhang, 虎杖). PD is also present in common foods like grapes, peanuts, red wine, cocoa, and mulberries. Studies have demonstrated its antioxidant, anti-inflammatory, and antibacterial properties.Animal studies

have shown that PD is non-toxic to the liver, kidneys, and cardiovascular system at doses up to 200 mg/kg. Clinical trials indicate that a 20 mg dose of PD administered twice daily for three months has no significant adverse health effects[12].

In several studies PD has been observed to downregulate xanthine oxidase (XOD) activity in the liver, thereby reducing SUA levels[12,15]. Additionally, PD mitigates oxidative stress-induced kidney damage by lowering malondialdehyde (MDA) levels and enhancing the activity of antioxidant enzymes such as catalase (CAT), superoxide dismutase (SOD), glutathione (GSH), and glutathione peroxidase (GSH-Px)[12].

In hyperuricemic mice, PD modulates urate transporters by suppressing GLUT9, URAT1 (which facilitates urate reabsorption) while upregulating ABCG2, OCT2, OAT1, and OAT3 (which promote urate excretion)[12,15]. Furthermore, PD reduces pro-inflammatory cytokines IL-1β, IL-6, and TNF-α, and decreases inflammatory cell infiltration in the ankle joints[12].

Inflammatory responses in gout are largely mediated by the NLRP3 inflammasome and the NF-κB pathway. The activation of proinflammatory cytokine IL-1β occurs in two stages: first, Toll-like receptors (TLRs) trigger NF-κB signalling, leading to IL-1β synthesis; second, MSU crystals activate the NLRP3 inflammasome, converting pro-IL-1β into its active form. In our studies, elevated expression of NLRP3 inflammasome-related proteins has been observed in the kidneys and ankle joints of hypouricemic mice[12,16]. PD significantly inhibits the NF-κB signalling pathway and the activation of NLRP3 inflammasome. This effect was confirmed using inhibitors such as MCC950 (which targets the NLRP3 inflammasome) and QNZ (a quinazoline-based NF-κB inhibitor). Both inhibitors, like PD, reduced protein expressions associated with these inflammatory pathways, further supporting PD's anti-gout properties[12]. Furthermore, PD demonstrated the ability to enhance the AMPK/SIRT1 pathway and reduce the phosphorylation levels of IKKα, IκBα, and p65[12,16]. Both of these are important in downregulating the NF-κB signaling pathway.

In Traditional Chinese Medicine (TCM), gout, known as "Tong Feng" (痛风), is attributed to a deficiency-type body constitution in combination with external pathogenic influences[17]. Genetic factors, dietary habits, and lifestyle irregularities contribute to this constitution, while external pathogenic elements—Wind, Cold, Dampness, and Heat—exacerbate the condition. Damp-heat is the most common TCM classification for gout, and treatment focuses on eliminating these factors while relieving pain and inflammation.

Other than Hu Zhang, a network pharmacology study on TCM herbal treatment for gouty arthiritis revealed that Radix Achyranthis Bidentatae (牛膝), Semen Coicis Albais (薏苡仁), Rhizoma Smilacis Glabrae (土茯苓), Cortex Phellodendron Amurense (黄柏) and Rhizoma Atractylodis Lanceae (苍术), form a core group of herbs which are commonly used[18,19]. Clinical research involving patients with accumulated dampness-heat of acute gouty arthritis, have shown that these herbs are able to lower uric acid and decrease the rates of adverse reactions.

In our effort to study the effects and interactions of TCM treatment and western medicine, we discovered that the outcome of TCM in treating gouty arthritis is non-inferior to that of western medicine. In fact, combination therapy of both Western medicine and TCM yield the best results in terms of uric acid levels and adverse events, suggesting its safety and efficacy for short term treatment of gouty arthritis (most trials had a treatment period of 4 weeks).

For example, in a 12-week, double-blind, double-dummy, non-inferiority study, outpatient individuals with newly diagnosed acute gouty arthritis were randomly assigned to receive Chuanhu (CH) anti-gout mixture or colchicine (Col)[20]. The levels of uric acid, alanine aminotransferase, aspartate aminotransferase and creatinine were decreased more significantly in the CH group than in the Col group ($P<0.05$), indicating that the Chuanhu anti-gout mixture may be superior to colchicine in lowering SUA, thus protecting the liver and kidney function. In the intent-to-treat (ITT) analysis, the difference of recurrence rate was -2.22% (95% CI: -10.78%-6.23%), while in the per-protocol (PP) analysis, the difference was -3.51% (95% CI: -12.61%, 5.59%) . The 95% interval confidences were included in the non-inferiority interval [-15%, 15%]; therefore, based on the recurrence rate, the treatment with the Chuanhu anti-gout mixture was not inferior to treatment with colchicine. Remarkably, fewer side effects were observed in the CH group (3.27%) than the Col group (28.41%).

In another study to evaluate the clinical efficacy and safety of the traditional Chinese herbal formula "Miaoling Xianzi Decoction", patients diagnosed with acute gouty arthritis of the damp-heat accumulation type were randomly assigned to 3 groups: TCM group, western medicine group, and integrated group[21]. Patients in TCM group were treated with "Miaoling Xianzi Decoction" alone, western group treated with colchicine, whereas integrated group treated with both "Miaoling Xianzi Decoction" and

colchicine. When patients' joint pain began to subside, the dosage of colchicine was reduced, the integrated group was observed to have a shorter period (4.87±1.50d) to reduce dosage as compared to western medicine group (5.53±1.20d). Overall results indicated that all three groups had significant clinical improvement. The integrated group had the best overall results, including greater reductions in joint pain, inflammation markers (WBC, ESR, CRP) and SUA. The TCM group demonstrated improvement that is non-inferior to western medicine, especially in symptom control, with fewer adverse reactions than the western medicine group. The colchicine-only group was also effective but had a higher rate of side effects, mainly gastrointestinal symptoms and abnormal liver functions. All three groups showed stable BUN and sCR readings before and after treatment, indicating no adverse effect on renal functions. Therefore, Miaoling Xianzi Decoction is effective in treating acute gouty arthritis of the damp-heat type. The integrated therapy (Miaoling Xianzi + colchicine) is the most effective, while Miaoling Xianzi alone offers a safer alternative to colchicine with notable clinical benefits.

In addition, we further studied the efficacy and safety of TCM treatment for chronic gouty arthritis. A clinical study investigated the use of TCM Huayu Sanjie Formula and its combination with allopurinol[22]. To explore a potentially safer and more effective approach, researchers conducted a randomized trial involving 63 patients, they are divided into three groups: a TCM group of 21 patients receiving Huayu Sanjie Formula alone, a Western medicine group of 20 patients receiving allopurinol alone, and an integrated group of 22 patients receiving both treatments.

The results demonstrated significant improvements across all groups, with the integrated treatment showing superior outcomes. Patients receiving both Huayu Sanjie Formula and allopurinol exhibited the greatest reductions in levels of SUA, ESR, and CRP, along with marked improvements in joint pain, swelling, and function. The total effective rate in the integrated group reached 90.91%, significantly higher than the 80.95% and 75% observed in the TCM and Western medicine groups, respectively. Importantly, the combination therapy did not increase adverse reactions, maintaining a safety profile comparable to monotherapy.

The Huayu Sanjie Formula, composed of herbs such as Rhizoma Smilacis Glabrae (土茯苓) and Alisma orientalis(Sam.)Juzep.(泽泻) for draining dampness and detoxifying, and Cyathula officinalis Kuan(川牛膝) and Pheretima aspergillum (E. Perrier)(地龙) for promoting blood circulation and unblocking meridians, addresses both the root causes and symptoms of gout. Its synergistic effect with allopurinol enhances uric acid reduction while mitigating inflammation and joint damage. These findings suggest that integrating traditional Chinese and Western medicine offers a promising therapeutic strategy for chronic gouty arthritis, combining high efficacy with improved tolerability. However, the sample sizes of these studies were relatively small (20-30) and the trials were lacking in post-treatment follow-up. Hence, further studies are needed to explore the effects of integrating TCM with Western medicine for long-term management of gout and hyperuricemia.

To conclude, the incidence of gout has been steadily increasing in recent years. Gout and hyperuricemia have become common metabolic disorders that pose a serious threat to public health. If left untreated, they may lead to complications such as joint damage, impaired kidney function, and diabetes, thus warranting close clinical attention.

TCM has demonstrated promising efficacy in the treatment of gouty arthritis. Treatment principles are often based on disease stages and include methods such as clearing heat and detoxifying, promoting diuresis to drain dampness, activating blood circulation to resolve stasis, and tonifying the liver and kidneys. Studies have shown that TCM formulations offer both good efficacy and safety. Some active components possess anti-inflammatory and uric acid-lowering properties, which can effectively improve relevant pathological indicators. However, due to the complex pathogenesis of hyperuricemia, the therapeutic targets of these active compounds remain inadequately understood. Future research should focus on exploring new molecular targets involved in the treatment of hyperuricemia to advance the mechanistic understanding and clinical application of TCM.

【References】

1. George, C., Leslie, S. W., & Minter, D. A. (2023). Hyperuricemia. In StatPearls. StatPearls Publishing.
2. Du, L., Zong, Y., Li, H. et al. Hyperuricemia and its related diseases: mechanisms and advances in therapy. Sig Transduct Target Ther 9, 212 (2024).
3. Chen-Xu, M., Yokose, C., Rai, S. K., Pillinger, M. H., & Choi, H. K. (2019). Contemporary Prevalence of Gout and Hyperuricemia in the United States and Decadal Trends: The National Health and Nutrition Examination.

4. Guo, K., Han, Y., Liu, S. et al. Prevalence of and trends in hyperuricemia by race and ethnicity among US adolescents, 1999 – 2018. Arthritis Res Ther 26, 193 (2024).
5. Feng, T., Li, C., Zheng, J., Xu, Y., Wang, X., Li, Y., Wang, Y., Zhu, B., Zhao, L., & Yu, J. (2024). Prevalence of and Risk Factors for Hyperuricemia in Urban Chinese Check-Up Population. International journal of endocrinology, 2024, 8815603.
6. Bardin, T., & Richette, P. (2014). Definition of hyperuricemia and gouty conditions. Current opinion in rheumatology, 26(2), 186 – 191.
7. Yokose, C., McCormick, N., Lu, N., Tanikella, S., Lin, K., Joshi, A. D., Raffield, L. M., Warner, E., Merriman, T., Hsu, J., Saag, K., Zhang, Y., & Choi, H. K. (2023). Trends in Prevalence of Gout Among US Asian Adults, 2011-2018. JAMA network open, 6(4), e239501.
8. Busso, N., So, A. Gout. Mechanisms of inflammation in gout. Arthritis Res Ther 12, 206 (2010).
9. Harris, M. D., Siegel, L. B., & Alloway, J. A. (1999). Gout and hyperuricemia. American family physician, 59(4), 925 – 934.
10. Khanna, D., Fitzgerald, J. D., Khanna, P. P., Bae, S., Singh, M. K., Neogi, T., Pillinger, M. H., Merill, J., Lee, S., Prakash, S., Kaldas, M., Gogia, M., Perez-Ruiz, F., Taylor, W., Lioté, F., Choi, H., Singh, J. A., Dalbeth, N., Kaplan, S., Niyyar, V., … American College of Rheumatology (2012). 2012 American College of Rheumatology guidelines for management of gout. Part 1: systematic nonpharmacologic and pharmacologic therapeutic approaches to hyperuricemia. Arthritis care & research, 64(10), 1431 – 1446.
11. Sattui, S. E., & Gaffo, A. L. (2016). Treatment of hyperuricemia in gout: current therapeutic options, latest developments and clinical implications. Therapeutic advances in musculoskeletal disease, 8(4), 145 – 159.
12. Xu, W., Chen, Y., Li, F., Zhang, X., Li, C., Wu, C., Huang, Y., & Xia, D. (2023). Polydatin alleviates hyperuricemia combined with gouty arthritis in mice via regulating urate transporters, NLRP3 inflammasome and NF-κB pathway. Journal of Functional Foods.
13. Horsburgh, S., Norris, P., Becket, G., Arroll, B., Crampton, P., Cumming, J., Keown, S., & Herbison, P. (2014). Allopurinol use in a New Zealand population: prevalence and adherence. Rheumatology international, 34(7), 963 – 970.
14. Lin Liu, Dan Wang, Mengyang Liu, Haiyang Yu, Qian Chen, Yuzheng Wu, Ruixia Bao, Yi Zhang, Tao Wang. The development from hyperuricemia to gout: key mechanisms and natural products for treatment. Acupuncture and Herbal Medicine, 2022, 2(1): 25-32.
15. Wu S, Wu G, Jiang H, Wu H. Polydatin lowers serum uric acid levels by increasing its excretion and suppressing production. Phcog Mag 2022; 18: 1089-95.
16. Chen, L., & Lan, Z. (2017). Polydatin attenuates potassium oxonate-induced hyperuricemia and kidney inflammation by inhibiting NF-κB/NLRP3 inflammasome activation via the AMPK/SIRT1 pathway. Food & Function, 8(5), 1785 – 1792. doi:10.1039/c6fo01561a
17. 朱于青.痛风速效汤治疗急性期痛风性关节炎的疗效及机制研究[D]. 杭州：浙江中医药大学, 2024.
18. 钱爱，黄传兵，李明，程园园，朱雅文，胡可心.基于多元数据挖掘探析专利中药复方治疗痛风性关节炎的用药规律[J].上海中医药杂志，2024，58(12):1 6-21.
19. 徐熠，徐玲玲，刘静，年华.中药治疗慢性痛风性关节炎的规律及其Logistic回归分析[J].世界临床药物，2013,34(08): 69-472.
20. Wang Y, Wang L, Li E, Li Y, Wang Z, Sun X, Yu X, Ma L, Wang Y, Wang Y. Chuanhu anti-gout mixture versus colchicine for acute gouty arthritis: a randomized, double-blind, double-dummy, non-inferiority trial. Int J Med Sci. 2014 Jun 14;11(9): 880-5.
21. 杨淑芬，陈岚，王运超，等. 妙芩仙子汤治疗湿热蕴结型痛风性关节炎急性发作期的疗效观察[J]. 上海中医药杂志, 2020, 54: 87-92 .
22. 余文景，梁翼，李敏，等.化瘀散结方联合别嘌醇治疗慢性痛风性关节炎临床观察[J].四川中医，2014，32(5): 104-106.

2025年5月
第三期海外针灸推拿培训班

郭素安医师

2025年5月19日至5月23日，在中国国家中医药管理局中医药国际合作专项“中国-新加坡中医药中心”建设中，由同济医药研究院与辽宁中医药大学共同主办的第三期中医短期培训班 - 针灸推拿培训班在辽宁中医药大学成功举办。本次培训班共有20名新加坡中医师远赴沈阳，参与为期5天的培训。本期培训以“神经系统疾病诊治与中医特色疗法技术”为主题，由辽宁中医药大学资深专家团队，通过采用理论授课、实践操作与临床学习结合的教学模式进行培训。

5月19日，辽宁中医药大学国际教育学院院长刘景峰、我院董事黄明春、郭素安、蔡欣容以及培训班的医师们共同参与了开班仪式。仪式由褚继伟老师主持。刘景峰院长代表辽宁中医药大学向新加坡中医师们表示热烈欢迎，并回顾了以往针灸培训班的丰硕成果；黄明春医师代表我院对辽宁中医药大学提供宝贵的学习机会表示衷心感谢，并表示学员们对这次培训班的期待。

在为期5天的培训班中，辽宁中医药大学知名专家董宝强教授、海英教授、郑海鹰教授、林星星教授、于本性教授及王树东教授无私的教导，耐心地为学员演示针灸操作手法，让学员们对神经系统疾病的解剖学、诊断、针灸治疗手法等有了更系统全面的认识。本次培训具可算是让各位医师学员开阔视野、在临床诊治方面提供新思路、提高诊疗水平。在课程之外，学员们也先后参观了辽宁中医药大学美丽的图书馆、中医药博物馆、附属医院门诊楼和康复中心，通过沉浸式的学习体验深入了解中医药历史发展和现代化。学员们整体对课程表示满意，时间虽短，但参与者获益良多。

所谓学无止境、即使此次短期培训圆满落幕，让医师们获益匪浅，愿各位医师们不忘初心、继续勤恳学习、让医术更上一层楼。

神经系统疾病与中医特色疗法培训班

时间 \ 星期		5月19日（周一）	5月20日（周二）	5月21日（周三）	5月22日（周四）	5月23日（周五）
上午	8:30-9:55	8:30-8:40 开班仪式 1 中风病的治疗与康复-董宝强	3 中风病的治疗与康复-董宝强	6 中医特色疗法介绍-郑海鹰	10 失眠的诊疗-董宝强	14 帕金森的诊疗-于本性
	10:00-11:25	2 中风病的治疗与康复-董宝强	4 老年痴呆症的诊疗-董宝强	7 物理疗法介绍-郑海鹰	11 面瘫的诊疗-林星星	15 癫痫的诊疗-王树东 11:30-12:00 结业仪式
下午	1:30-2:55	参观辽宁中医药大学图书馆	5 眼针治疗中风后遗症-海英	8 特色疗法中心临床观摩学习-附属医院门诊特色疗法中心	12 现代疗法中心临床观摩学习-附属医院康复中心现代疗法中心	
	3:00-4:00	参观辽宁中医药大学博物馆（辽宁省中医药博物馆）	参观辽宁中医药大学附属医院及康复中心	9 特色疗法中心临床观摩学习-附属医院门诊特色疗法中心	13 现代疗法中心临床观摩学习-附属医院康复中心现代疗法中心	

《医道传承·临床新悟》2025年徐力教授中医肿瘤高级研修班

郑黄芳医务总监、颜晶医师

2025年10月4日至6日，同济医药研究院特邀南京中医药大学中医肿瘤学专家徐力教授，亲临新加坡主讲中医肿瘤高级研修班与病例讨论会。

10月4日上午，研修班在热烈的掌声中正式开幕。莅临开班仪式的嘉宾包括：新加坡同济医院暨同济医药研究院主席杨应群先生、秘书长刘廷辉先生、郑黄芳主任、世界中医药学会联合会肿瘤外治法专业委员会常务副秘书长郑妍女士。开班仪式中杨应群主席亦为徐教授颁发“名师传道、医者仁心”纪念牌匾与感谢状，以表彰其学术贡献与仁医之德。

> “病人以生命相托，我唯有全力以赴。”

徐力教授是南京中医药大学肿瘤内科学教授、医学博士、主任医师，现任南京中医药大学肿瘤研究所所长、江苏省中医院肿瘤内科主任医师。徐教授从事中医肿瘤工作已有30余年，他擅长中西医结合治疗恶性肿瘤，特别是在肺癌、乳腺癌、脑瘤、消化系统肿瘤等方面具有丰富的临床经验。徐力教授提出的“三段六辨”理论是其学术思想的核心，以三段为纲，定整体之坐标；六辨为纬，察局部之细节；时空交汇处，燮理阴阳，攻守有度，以精准治疗提高临床疗效。

研修班正以“三段六辨”为主线，安排了四场专题课程，包括《徐力教授三段六辨学术思想介绍》、《癌前病变中医药治疗精要》、《徐力教授临床抗癌药对应用精要》以及《经方治疗肿瘤三段六辨解析》。徐教授以深厚的学术功底和丰富的临床经验，全面阐述中医肿瘤学的理论精髓与实践经验，强调分期辨证指导治疗的重要性，并分享“药对临证”的临床思维，为参会医师带来系统而可操作的知识框架。

两天的学习过程中，现场气氛热烈，线上线下的学员积极互动，纷纷表示受益匪浅，认为徐教授授课生动、逻辑清晰且极具启发性。徐力教授的无私分享，不仅为本地中医师提供了宝贵的临床思路，也为新马两地中医肿瘤学的学术交流与发展带来了新的契机。

继两天学习的积淀后，面向中医肿瘤专病组医师的病例讨论会也圆满举行，会议在形式设计、场地布置及流程规划等方面均体现出严谨规范与高效组织，获得与会医师一致好评。讨论过程中，主讲教授以深厚的学术功底和丰富的临床经验，对病例进行了深入剖析与精辟点评，精准指出了临床治疗中的思维盲点。除诊疗思路外，教授亦特别强调医师在临床实践中应注重与患者的沟通，建立良好的信任关系，从而在诊疗过程中实现双方的最大理解与保护。本次讨论会内容充实、交流充分，极大地拓展了医师们的临床思维与实践视野，具有重要的学习与借鉴意义，是一次成果丰硕、学术氛围浓厚的专业研讨活动。

正如徐教授所言：“病人以生命相托，我唯有全力以赴。”这一初心与精神贯穿了两天的课程，也深深感染了在场的每一位医师。本次研修班圆满成功举办，为新加坡中医肿瘤学术交流与临床提升注入了新的动力。

《同济医药》征稿通知

《同济医药》是由同济医药研究院主办的一部综合性、国际性、学术性的中医学类专业年刊。本刊物的办刊宗旨是提升中医师的专业水平；促进国内外中医药学术交流和科学发展。

望《同济医药》能不断得到海内外广大同道的关心与支持，成为中医界学术争鸣和弘扬中医的平台。诚挚邀请广大中医界人士、专家、学者踊跃投稿。

征稿事宜如下：

1. 本刊主要设有以下栏目：

(1) 中医药基础理论研究、临床研究；
(2) 中医药文化发掘与研究；
(3) 中医药文献整理研究；
(4) 名老中医学术经验传承研究；
(5) 中医、中西医结合临床报道；
(6) 中医药人才培养目标及措施探讨。

2. 时间安排

每年收稿截止时间为当年10月1日，12月出版。

3. 论文要求及认定问题

(1) 文稿要求研究资料真实、字迹清楚、图表清晰、文字通顺规范。
(2) 论文按照学报格式规范撰写，字数以3000-5000字左右为宜。参考文献要规范引用和著录。
(3) 投稿不退稿，一个月内未通知采用、作者可自行处理。
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第三期海外针灸培训班闭幕仪式全体合影

郑海鹰教授演示肩部治疗手法

山东中医药大学妇科生殖科培训班

新加坡医师学员于山东中医药大学国际教育学院进行全体合影

参观山东中医药大学附属医院山东省中医院

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