

## • 专题论坛 •

# 脓毒症肠屏障损伤“肺肠合治”思路研究

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**【摘要】**以中医经典理论为指导,探讨脓毒症肠屏障损伤“肺肠合治”临证思路。通过梳理祖国医学关于“肺与大肠相表里”经典论述,以现代医学对“肺肠功能密切相关性”的研究为基础,结合临证实践经验,总结出脓毒症肠屏障损伤的临床表现为邪毒壅盛、热结肠腑,实证为多见;其主要病机是肺与大肠气机失调,肺气失去宣降,胃肠通降作用失常,肺经及大肠经两经受累,为肺肠同病;治疗以“肺肠合治”为宜。本文为阐释中医药干预脓毒症肠屏障损伤提供了临证思路。

**【关键词】**肺与大肠相表里; 肺肠合治; 脓毒症肠屏障损伤; 临证思路

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**Study on idea of "combined treatment of lung and intestine" for intestinal barrier injury in sepsis**

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**【Abstract】**This article was guided by the classic theory of traditional Chinese medicine (TCM), involving the investigation of the clinical thinking related to "combined treatment of lung and intestine" for intestinal barrier injury in sepsis. Through discussing the classical theory of "the lung and the large intestine being interiorly and exteriorly related" in TCM, based on the research of "close relationship between lung and intestine functions" in modern medicine and combined with clinical practical experiences, it was summarized that the clinical manifestations of intestinal barrier injury in sepsis were exuberant evil and toxin, heat binding in intestinal viscera and the repletion pattern being more commonly seen; the main pathogenesis was the imbalance of lung and large intestine qi, loss of lung qi diffusing and down-bearing and abnormality of gastrointestinal free down-bearing, indicating the involvement of both lung and large intestine meridians or in other words simultaneous onset of lung and intestine diseases. The proper management of the disease should be combined treatment for both lung and intestine disorders. This article provided a clinical thinking route for the intervention of TCM for intestinal barrier injury in sepsis.

**【Key words】**Lung associated with the large intestine; Combined treatment of lung and intestine; Intestinal barrier injury in sepsis; Clinical thinking

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脓毒症(Sepsis)定义为机体因感染引起反应失调,从而导致危及生命的器官功能障碍,发病率逐年上升,可迅速进展为多器官功能障碍综合征(MODS),病死率高,至今仍是重症医学科患者的重要死亡原因之一<sup>[1-3]</sup>。脓毒症对医疗资源的消耗大,对人们的健康造成严重危害,同时带来巨大的家庭和社会经济负担。尽管多年来国际上对脓毒症采取了积极的“拯救”措施,但目前仍没有特别行之有效的治疗方法,其发病率和病死率居高不下,临幊上仍在积极寻求现代医学对脓毒症的治疗方法<sup>[4-5]</sup>。胃肠道是脓毒症容易损害的器官,脓毒症常导致肠黏膜屏障受损,胃肠道一旦出现损伤,肠道内的细菌和内毒素就会进入血液循环,再次对机体造成打击,这是导致MODS的“始动因素”<sup>[6-8]</sup>,因此有效防治肠屏障损伤将成为预防脓毒症发展为MODS、降低

病死率的重要方法和手段。目前,现代医学治疗脓毒症肠屏障损伤主要集中在治疗原发病,针对肠黏膜屏障本身的治疗措施并不确切<sup>[9]</sup>。近年来中医药干预脓毒症肠黏膜屏障损伤受到关注,治疗多偏向于单纯应用“通腑法”改善肠屏障功能,但效果不确切<sup>[10]</sup>。我们在祖国医学“肺与大肠相表里”的理论基础上,结合“肺肠合治”治疗原则,创制了通腑理肺汤,已应用于临幊多年,表现出良好的胃肠功能调节作用<sup>[11]</sup>。现将脓毒症肠屏障损伤中医“肺肠合治”思路梳理如下,旨在为阐释中医药干预脓毒症肠屏障损伤提供临证思路。

## 1 “肺与大肠相互表里”理论研究

中医藏象学说认为,肺与大肠相互表里,各为其用,指出了肺与大肠两者在生理和病理上的相互作用关系。最早在《黄帝内经》中就有了肺与大肠

经脉循行络属的论述。《灵枢·经脉》云：“肺手太阴之脉，起于中焦，下络大肠，还循胃口，上膈属肺……大肠手阳明之脉，起于大指次指之端……下入缺盆，络肺，下膈，属大肠。”详细论述了肺和大肠两经经脉的循行路线与相互络属关系，手太阴肺经经脉起始于上腹部，先向下行，与手阳明大肠经脉相互联络，返回循着胃的上口贲门，上贯膈膜，入属于肺，……大肠手阳明经脉，起于食指尖端，……从锁骨上窝进入，络于肺，通过横膈，属于大肠。《灵枢·本输篇》曰：“肺合大肠，大肠者，传道之腑。”《医精经义》云：“大肠所以能传导者，以其为肺之腑肺气下达，故能传导。”从生理角度讲述了肺与大肠的表里关系，肺居上焦，名曰华盖，与大肠相互表里，主一身之气，主司呼吸，具有宣发肃降、通调水道之功，还具有吸入自然界之清气、排出浊气的功能；大肠主司津液，具有传导化物之功，而其正常传导功能的发挥有赖于肺气宣发肃降功能的正常行使，宣发则津液可布，大肠得以濡润；肃降则正常的胃肠传导功能得以维持，肠腑自然通畅，而腑气通则肺气降，两者互为影响。因此，中医经典理论早有关于肺与大肠在经脉方面的络属关系，以及肺与大肠生理和病理上相互联系的论述，为“肺肠功能密切相关性”理论奠定基础。

现代医学研究进一步证实了“肺肠功能密切相关性”的科学性。祖国医学中提及的“肺”可等同于现代医学中的呼吸系统，而“大肠”可等同于现代医学中的肠道系统。李杰等<sup>[12]</sup>总结了前人的研究，认为肺与肠在生物进化发育、表面活性和内分泌物质、黏膜免疫以及神经—内分泌—免疫网络等诸多方面都有一定相关性。肺与大肠在生理和病理上相互影响，肺肠之间的病变可以相互传变。王今达等<sup>[13]</sup>进行了关于“肺与大肠相表里”学说临床意义及本质的探讨，结果显示，钳夹肠系膜上动脉的模型动物出现严重的肺损害，如水肿、出血、肺不张等表现，表明因肠道缺血而引起的肠道功能障碍与肺损伤之间存在特异性关系，也证实了脓毒症在引起肠屏障损伤的同时还会伴有一定的肺功能损伤。

基于“肺与大肠相表里”理论，以“肺肠功能密切相关性”研究为基础的治疗方法目前集中在“肺病治肠”“肠病治肺”及“肺肠合治”三方面，“肺病治肠”是应用“治肠”的方法治疗肺系疾病，如支气管哮喘<sup>[14]</sup>；“肠病治肺”是应用“治肺”方法治疗肠系疾病，如溃疡性结肠炎<sup>[15]</sup>；“肺肠合治”亦大多集中在慢性阻塞性肺疾病(COPD)等肺系疾病的治疗<sup>[16]</sup>。

## 2 脓毒症肠屏障损伤“肺肠合治”思路

中医学无脓毒症肠屏障损伤的病名，根据其临床特征，中医病名可归属为“痞胀”“肠痹”“肠结”及“腹胀”等范畴，以高热口渴、大便秘结、腹部胀满、舌红苔黄脉数或舌红苔黄燥或灰黑起刺、脉沉数有力等为主症，可见胃肠功能受损与中医学中腑气不通证的证候表现相似。病因病机为毒邪侵袭，入里化热，导致体内邪热亢盛，毒热伤津液，肠中糟粕少津而搏结，肠道燥屎积滞，传导化物异常，致肺气肃降功能受损，肺气宣发肃降受损反过来加重胃肠通降作用失常，合为肺与大肠气机失调。肺气失去宣降与胃肠通降作用失常是脓毒症出现胃肠功能障碍的主要病机。因而，根据肺与大肠在经脉方面的络属关系理论，结合以上证候病因病机特点，脓毒症肠屏障损伤为肺经及大肠经两经受累，病位在肠，与肺密切相关，为肺肠同病，治疗以“肺肠合治”为宜。这与蒋华等<sup>[17]</sup>的研究结论一致，当脓毒症发生时，往往肠腑首先发病，肠腑不通，肺失宣肃；而当肺失治节，肺气不利，气机失常，则会对大肠传导功能有所影响，从而加重腑气不通，因此脓毒症的治疗原则应坚持“肠肺同治”<sup>[17]</sup>。目前中医学治疗脓毒症肠屏障损伤多偏向于单纯应用“通腑法”改善肠道免疫屏障功能<sup>[10]</sup>，这可能就是其效果不确切的根源所在。

## 3 通腑理肺汤的“肺肠合治”作用

通腑理肺汤基于“肺与大肠相表里”理论，在刘尚义国医大师学术思想的指导下创立。刘尚义认为，脓毒症肠屏障损伤临床大多表现为邪毒壅盛、热结肠腑，一派实证之象，肺与大肠气机失调，肺气失去宣降与胃肠通降作用失常是其主要病机，为肺经及大肠经两经受累，病位在肠，但与肺密切相关，为肺肠同病，治疗以“肺肠合治”为宜。通腑理肺汤由大黄、芒硝、连翘、黄芩、杏仁、厚朴、白芨、三七等八味药组成，方中大黄与芒硝共为君药，起到消除积滞、润肠通便、通腑泻浊之功，是全方“治肠”理念的最好体现；方中连翘、黄芩和杏仁共为臣药，具有清肺热、调肺气之功，有提壶揭盖之意，是该方“治肺”理念的体现；厚朴与白芨共为佐药，厚朴佐君理气导滞、健脾消食，白芨佐臣清热解毒、调理肺气；三七为使药，活血化瘀，血行则气畅。全方具有化瘀通腑、清热泄浊、宣肺解毒之功，充分体现了治疗脓毒症胃肠功能障碍的“肺肠合治”作用。

通腑理肺汤在本科室临床应用多年，显示出该方能有效地改善脓毒症或 MODS 患者的临床症状，

显著降低腹腔内压力水平,升高胃液 pH 值,改善及调节胃肠功能,显著提高脓毒症或 MODS 患者肠功能障碍的临床疗效<sup>[11]</sup>。另外,应用该方结肠透析能够显著缩短合并肺炎脓毒症患者的呼吸机应用时间,提高脱机成功率<sup>[18]</sup>。在临证中,通腑理肺汤对脓毒症或 MODS 患者表现出良好的肺和胃肠功能保护作用,具有明确的“肺肠合治”作用,且未见不良反应,已经成为脓毒症中医内科临床诊疗指南中“脓毒症之腑气不通证”的推荐方药<sup>[19]</sup>。

#### 4 结语

综上,本文通过梳理中医经典理论,基于“肺与大肠相表里”理论指导,并以现代医学对“肺肠功能密切相关性”研究为基础,结合临证实践经验,总结出脓毒症肠屏障损伤临床大多表现为邪毒壅盛、热结肠腑,一派实证之象,肺与大肠气机失调,肺气失去宣降与胃肠通降作用失常是其主要病机。根据肺与大肠在经脉方面的络属关系理论,结合以上证候病因病机特点,脓毒症肠屏障损伤为肺经及大肠经两经受累,病位在肠,但是与肺密切相关,为肺肠同病,治疗以“肺肠合治”为宜。

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#### 参考文献

- [1] Singer M, Deutschman CS, Seymour CW, et al. The third international consensus definitions for sepsis and septic shock (Sepsis-3) [J]. *JAMA*, 2016, 315 (8): 801–810. DOI: 10.1001/jama.2016.0287.
- [2] Tiru B, DiNino EK, Orenstein A, et al. The economic and humanistic burden of severe sepsis [J]. *Pharmacoeconomics*, 2015, 33 (9): 925–937. DOI: 10.1007/s40273-015-0282-y.
- [3] Azkárate I, Choperena G, Salas E, et al. Epidemiology and prognostic factors in severe sepsis/septic shock. Evolution over six years [J]. *Med Intensiva*, 2016, 40 (1): 18–25. DOI: 10.1016/j.medin.2015.01.006.
- [4] 中国医疗保健国际交流促进会急诊医学分会,中华医学会急诊医学分会,中国医师协会急诊医师分会,等.中国“脓毒症早期预防与阻断”急诊专家共识[J].中华危重病急救医学,2020,32(5):518–530. DOI: 10.3760/cma.j.cn121430-20200514-00414. Emergency Medicine Branch of Chinese Medical Care International Exchange Promotion Association, Emergency Medical Branch of Chinese Medical Association, Chinese Medical Doctor Association Emergency Medical Branch, et al. Consensus of Chinese experts on early prevention and blocking of sepsis [J]. *Chin Crit Care Med*, 2020, 32 (5): 518–530. DOI: 10.3760/cma.j.cn121430-20200514-00414.
- [5] 董丽华,吕娟,丁黎莉,等.脓毒症免疫治疗的研究进展[J].中华危重病急救医学,2017,29(2):184–187. DOI: 10.3760/cma.j.issn.2095-4352.2017.02.019.
- Dong LH, Lyu J, Ding LL, et al. Advances in immunotherapeutic research of sepsis [J]. *Chin Crit Care Med*, 2017, 29 (2): 184–187. DOI: 10.3760/cma.j.issn.2095-4352.2017.02.019.
- [6] Yoseph BP, Klingensmith NJ, Liang Z, et al. Mechanisms of intestinal barrier dysfunction in sepsis [J]. *Shock*, 2016, 46 (1): 52–59. DOI: 10.1097/SHK.0000000000000565.
- [7] Mittal R, Coopersmith CM. Redefining the gut as the motor of critical illness [J]. *Trends Mol Med*, 2014, 20 (4): 214–223. DOI: 10.1016/j.molmed.2013.08.004.
- [8] 陈分乔,许文忠,高海运,等.中药肠胃舒对脓毒症胃肠功能障碍患者的抗炎效果及肠道机械屏障保护作用[J].中国中西医结合急救杂志,2016,23(5):458–460. DOI: 10.3969/j.issn.1008-9691.2016.05.003.
- Chen FQ, Xu WZ, Gao HY, et al. A research on anti-inflammatory effect of traditional Chinese medicine Changweishu on sepsis patients with gastrointestinal dysfunction and its protective effect on intestinal mechanical barrier [J]. *Chin J TCM WM Crit Care*, 2016, 23 (5): 458–460. DOI: 10.3969/j.issn.1008-9691.2016.05.003.
- [9] 张璐瑶,聂垚,柯路,等.艾司洛尔对脓毒症大鼠肠黏膜屏障的影响[J].肠外与肠内营养,2014,21(5):305–308.
- Zhang LY, Nie Y, Ke L, et al. Effect of esmolol on intestinal mucosal barrier function in sepsis rats [J]. *Parenter Enteral Nutr*, 2014, 21 (5): 305–308.
- [10] 苏艳丽,王红,张淑文,等.中药通腑颗粒治疗脓毒症肠衰竭的疗效及机制探讨[J].首都医科大学学报,2015,36(3):497–500. DOI: 10.3969/j.issn.1006-7795.2015.03.032.
- Su YL, Wang H, Zhang SW, et al. Exploring therapeutic mechanisms of traditional Chinese medicine Tongfu granule in preventing sepsis-induced intestinal dysmotility [J]. *J Cap Med Univ*, 2015, 36 (3): 497–500. DOI: 10.3969/j.issn.1006-7795.2015.03.032.
- [11] 李兰,陈立,黄瑞峰,等.直肠滴入通腑理肺汤对严重脓毒症/多器官功能障碍综合征患者胃肠功能调节作用的临床研究[J].中国中西医结合急救杂志,2012,19(4):209–212. DOI: 10.3969/j.issn.1008-9691.2012.04.006.
- Li L, Chen L, Huang RF, et al. A clinical research on regulation of gastrointestinal function by rectal instillation of Tongfu Lifei soup in patients with severe sepsis or multiple organ dysfunction syndrome [J]. *Chin J TCM WM Crit Care*, 2012, 19 (4): 209–212. DOI: 10.3969/j.issn.1008-9691.2012.04.006.
- [12] 李杰,程欣,贾钰华.肺与大肠相表里物质基础研究方法的探讨[J].中国中西医结合杂志,2011,31(2):256–259.
- Li J, Cheng X, Jia YH. Discussion on method of studying material base on Chinese medical theory of "Fei and Dachang Being Interior-exteriorly Correlated" [J]. *Chin J Integr Trad West Med*, 2011, 31 (2): 256–259.
- [13] 王今达,高天元,崔乃杰,等.祖国医学“肺与大肠相表里”学说的临床意义及其本质的探讨——临床病例分析与实验研究[J].中国中西医结合杂志,1982,2(2):66,77–81,129.
- Wang JD, Gao TY, Cui NJ, et al. The clinical significance and exploration of the nature of the theory "The Lung and the Large Intestine are Interior-exteriorly Related" in TCM [J]. *Chin J Integr Trad West Med*, 1982, 2 (2): 66, 77–81, 129.
- [14] 王宝凯,杨超,赵吉平.支气管哮喘从肺外脏腑论治的实验研究[J].临床误诊误治,2015,28(8):100–104. DOI: 10.3969/j.issn.1002-3429.2015.08.035.
- Wang BK, Yang C, Zhao JP. An experimental study on the treatment of bronchial asthma from the external and external organs of the lungs [J]. *Clin Misiagn Misther*, 2015, 28 (8): 100–104. DOI: 10.3969/j.issn.1002-3429.2015.08.035.
- [15] 王新月,孙慧怡.基于肺与大肠相表里理论探讨从肺论治溃疡性结肠炎[J].北京中医药大学学报,2011,34(3):153–155.
- Wang XY, Sun HY. Treatment of ulcerative colitis from lung based on theory of lung and large intestine being interior-exteriorly related [J]. *J Beijing Univ Trad Chin Med*, 2011, 34 (3): 153–155.
- [16] 汪丙柱.从肺与大肠相表里论治慢性阻塞性肺疾病稳定期的临床观察[J].中国中医药信息杂志,2008,15(9):76–77. DOI: 10.3969/j.issn.1005-5304.2008.09.040.
- Wang BZ. Clinical observation on the treatment of chronic obstructive pulmonary disease in stable stage from the exterior and interior of lung and large intestine [J]. *Chin J Inform Trad Chin Med*, 2008, 15 (9): 76–77. DOI: 10.3969/j.issn.1005-5304.2008.09.040.
- [17] 蒋华,周江,陈明祺,等.通腑泻肺法对脓毒症大鼠的肺保护作用研究[J].中国中西医结合急救杂志,2015,22(3):248–252. DOI: 10.3969/j.issn.1008-9691.2015.03.006.
- Jiang H, Zhou J, Chen MQ, et al. The lung protective effect of Tongfu Xiefei method in rats with sepsis [J]. *Chin J TCM WM Crit Care*, 2015, 22 (3): 248–252. DOI: 10.3969/j.issn.1008-9691.2015.03.006.
- [18] 吕波,陈立,李兰,等.通腑理肺汤结肠透析对肺炎合并脓毒症患者血乳酸水平的影响[J].中国中医急症,2013,22(11):1881–1883.
- Lyu B, Chen L, Li L, et al. The effect of the Tongfulifei Decoction and colon dialysis on the blood lactate levels in patients with the pneumonia and sepsis [J]. *J Emerg Trad Chin Med*, 2013, 22 (11): 1881–1883.
- [19] 中华中医药学会.中医内科临床诊疗指南(第二册)[M].北京:中国中医药出版社,2020:218.
- Chinese Society of Traditional Chinese Medicine. Guideline of the clinical diagnosis and treatment of internal medicine of Chinese Medicine (Volume II) [M]. Beijing: China Traditional Chinese Medicine Press, 2020: 218.