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• 临床研究 •

慢性盆腔炎患者盆腔液病原菌分布及 中西医结合疗效分析*

许东阳¹, 康志媛^{2**}, 窦纪梁³, 吕文艳⁴(1. 南阳医学高等专科学校第一附属医院, 河南南阳 473000; 2. 河南中医药大学第一附属医院;
3. 河南应用技术学院; 4. 南阳医学高等专科学校)

【摘要】 目的 探析慢性盆腔炎患者盆腔液病原菌分布特点及中西医结合治疗效果。方法 选取2022-2023年的110例慢性盆腔炎患者为研究对象, 选取同期就诊的80例急性盆腔炎患者, 采集两组患者盆腔液标本, 进行病原菌鉴定。选取同期体检健康女性110例为对照组, 对比两组女性生殖道解脲支原体(*Ureaplasma urealyticum*, UU)、沙眼衣原体(*Chlamydia trachomatis*, CT)感染情况及阴道炎症情况。将110例慢性盆腔炎患者按照随机抽样法分成试验组和对照组, 对照组采用常规西医治疗方案, 试验组在对照组的基础上, 加用大黄红藤煎加减进行中西医结合治疗, 对比试验组与对照组患者治疗效果、临床症状消失时间及治疗前后炎症因子水平。结果 110例慢性盆腔炎患者病原菌主要为大肠埃希菌、凝固酶阴性葡萄球菌, 80例急性盆腔炎患者病原菌主要为大肠埃希菌、粪肠球菌, 急性盆腔炎患者大肠埃希菌、凝固酶阴性葡萄球菌占比低于慢性盆腔炎患者, 粪肠球菌占比显著高于慢性盆腔炎患者。对比慢性盆腔炎患者与对照组 UU、CT 感染及阴道炎症情况, 慢性盆腔炎患者 UU 感染率 39.09%, CT 感染率 29.09%, BV 感染率 10.91%, VC 感染率 7.27%, TV 感染率 3.64%, AV 感染率 2.73%, UU、CT 感染率显著高于对照组 ($P < 0.05$)。实验组患者总有效率为 90.91% (50/55), 对照组为 70.91% (39/55), 试验组总有效率显著高于对照组。试验组腹痛消失时间为 (2.44 ± 1.03)d, 尿频尿急消失时间为 (3.02 ± 1.43)d, 阴道黏膜充血消失时间为 (2.02 ± 0.78)d, 体温恢复正常时间为 (2.35 ± 0.95)d, 各项临床症状消失时间显著短于对照组 ($P < 0.05$)。两组患者治疗前各项炎症因子水平无差异, 治疗后 TNF- α 、CRP、IL-6 水平差异有统计学意义 ($P < 0.05$)。结论 慢性盆腔炎患者盆腔液病原菌主要为大肠埃希菌、凝固酶阴性葡萄球菌, UU、CT 感染率较高。慢性盆腔炎患者经过中西医结合治疗后, 临床治疗效果优于单纯西药治疗, 临床症状持续时间明显缩短, 可有效降低患者炎症因子水平。

【关键词】 慢性盆腔炎; 病原菌; 中西医结合**【文献标识码】** A**【文章编号】** 1673-5234(2024)10-1202-04

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Analysis of the distribution characteristics of pathogenic bacteria in pelvic fluid of patients with chronic pelvic inflammatory disease and the clinical effect of integrated traditional Chinese and Western medicine treatment

XU Dongyang¹, KANG Zhiyuan², DOU Jiliang³, LV Wenyan⁴ (1. Nanyang Medical Vocational School First Affiliated Hospital, Nanyang 473000, Henan, China; 2. The First Affiliated Hospital of Henan University of Traditional Chinese Medicine; 3. Henan Institute of Applied Technology; 4 Nanyang Medical Higher Vocational School) ***

【Abstract】 **Objective** To explore the distribution characteristics of pathogenic bacteria in pelvic fluid of patients with chronic pelvic inflammatory disease and the clinical effect of integrated traditional Chinese and Western medicine treatment. **Methods** A total of 110 patients with chronic pelvic inflammatory disease from 2022 to 2023 were selected as the research objects, and 80 patients with acute pelvic inflammatory disease who were treated during the same period were selected. Pelvic fluid specimens of patients in both groups were collected for pathogen identification. A total of 110 healthy women who underwent physical examination during the same period were selected as the control group. The infection status of *Ureaplasma urealyticum* (UU), *Chlamydia trachomatis* (CT) in the female reproductive tract and vaginal inflammation were compared between the two groups. The 110 patients with chronic pelvic inflammatory disease

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were divided into the experimental group and the control group according to the random sampling method. The control group was treated with the conventional Western medicine treatment plan. On the basis of the control group, the experimental group was treated with modified Dahuang Hongteng Decoction for integrated traditional Chinese and Western medicine treatment. The therapeutic effects, the disappearance time of clinical symptoms and the levels of inflammatory factors before and after treatment were compared between the experimental group and the control group.

Results The main pathogens in 110 patients with chronic pelvic inflammatory disease were *Escherichia coli* and coagulase-negative *Staphylococcus*. The main pathogens in 80 patients with acute pelvic inflammatory disease were *E. coli* and *Enterococcus faecalis*. The proportions of *E. coli* and coagulase-negative *Staphylococcus* in patients with acute pelvic inflammatory disease were lower than those in patients with chronic pelvic inflammatory disease, and the proportion of *E. faecalis* was significantly higher than that in patients with chronic pelvic inflammatory disease. The UU and CT infections and vaginal inflammation conditions were compared between patients with chronic pelvic inflammatory disease and the control group. The infection rate of UU in patients with chronic pelvic inflammatory disease was 39.09%, the infection rate of CT was 29.09%, the infection rate of BV was 10.91%, the infection rate of VC was 7.27%, the infection rate of TV was 3.64%, and the infection rate of AV was 2.73%. The infection rates of UU and CT in patients with chronic pelvic inflammatory disease were significantly higher than those in the control group ($P < 0.05$). The total effective rate of patients in the experimental group was 90.91% (50/55), and the total effective rate of patients in the control group was 70.91% (39/55). The total effective rate in the experimental group was significantly higher than that in the control group. The disappearance time of abdominal pain in the experimental group was (2.44 ± 1.03) days, the disappearance time of frequent urination and urgent urination was (3.02 ± 1.43) days, the disappearance time of vaginal mucosa congestion was (2.02 ± 0.78) days, and the time for body temperature to return to normal was (2.35 ± 0.95) days. The disappearance time of various clinical symptoms in the experimental group was significantly shorter than that in the control group ($P < 0.05$). There was no difference in the comparison of various inflammatory factors between the two groups of patients before treatment. After treatment, the differences in the levels of TNF- α , CRP, and IL-6 were statistically significant ($P < 0.05$).

Conclusion The main pathogenic bacteria in the pelvic fluid of patients with chronic pelvic inflammatory disease were *E. coli* and coagulase-negative *Staphylococcus*, and the infection rates of UU and CT were relatively high. After the treatment of integrated traditional Chinese and Western medicine for patients with chronic pelvic inflammatory disease, the clinical treatment effect was better than that of simple Western medicine treatment, the duration of clinical symptoms was significantly shortened, and it can effectively reduce the levels of inflammatory factors in patients.

【Keywords】 chronic pelvic inflammatory disease; pathogenic bacteria; integrated Traditional Chinese and Western medicine

盆腔炎(Pelvic inflammatory disease, PID)是妇科常见疾病之一,主要指由女性上生殖道炎症反应引发的一组疾病,主要包括子宫内膜炎、输卵管炎、输卵管卵巢脓肿等^[1]。慢性盆腔炎发病与多种慢性损害因素相关,不仅会对患者的生活质量造成严重影响,而且反复发作会导致女性整个盆腔发生组织粘连、破损、增生等,容易引发严重疾病^[2-3]。慢性盆腔炎发病位置位于盆腔深部,临床症状表现不同,标本采集相对困难,为临床诊断造成一定困难,导致该疾病常出现误诊的情况,患者无法及时接受治疗^[4]。相关研究发现,引发慢性盆腔炎的病原菌主要分为内源性与外源性,内源性病原菌主要包括需氧菌、厌氧菌等,外源性病原菌主要包括解脲支原体、沙眼衣原体、淋巴奈瑟菌等^[5]。

本研究分析110例慢性盆腔炎患者的临床资料,了解慢性盆腔炎患者盆腔液病原菌分布特点及中西医结合疗效,以期为临床上针对慢性盆腔炎的抗感染治疗提供参考依据。

材料与方 法

1 研究对象

选取2022-2023年本院妇产科接诊的110例慢性盆腔炎患者为研究对象。纳入标准:①年龄 ≥ 20 岁;②符合《盆腔炎症性疾病诊治规范》相关诊断标准^[6]。排除标准:①妊娠期或哺乳期女性;②合并自身免疫缺陷性疾病者;③合并血液系统疾病者;④合并恶性肿瘤者;⑤有盆腔手术史者;⑥合并妇科恶性疾病者;⑦合并传染性疾病者;⑧依从性差,无法积极配合治疗者。

本研究获本院伦理委员会审核批准。

2 盆腔液病原菌鉴定

选取同期于本科室就诊的80例急性盆腔炎患者,两组患者基本资料差异无统计学意义($P > 0.05$)。参照《全国临床检验操作规程(第四版)》相关要求,采集两组患者盆腔液标本,进行病原菌培养分离、纯化后进行菌种鉴定。对比两组患者盆腔液病原菌分布特点。

3 慢性盆腔炎患者病因分析

选取同期体检健康女性 110 例为对照组,对比慢性盆腔炎患者与对照组女性生殖道解脲支原体(*Ureaplasma urealyticum*, UU)、沙眼衣原体(*Chlamydia trachomatis*, CT)感染情况及阴道炎症情况。两组女性于月经期结束 3~7 d,嘱检查者取截石位,使用阴道窥器将宫颈口充分暴露后,采用 2 根一次性长拭子进行采样。采集标本立即送检,使用 PCR 方法检测 UU、CT 感染情况。同时检查两组女性阴道炎症情况,包括细菌性阴道炎(Bacterial vaginosis, BV)、假丝酵母阴道炎(Vaginal candidiasis, VC)、滴虫性阴道炎(*Trichomonas vaginitis*, TV)、需氧菌性阴道炎(Aerobe vaginosis, AV)。

4 中西医结合治疗治疗方案及临床效果评价

4.1 治疗方案 将 110 例慢性盆腔炎患者按照随机抽样法分成两组,不同分组患者一般资料差异无统计学意义($P > 0.05$)。对照组采用常规西医治疗方案,采用盐酸左氧氟沙星注射液经氯化钠注射液稀释后,进行静脉滴注,2 次/d。同时口服甲硝唑,2 次/日,每次 0.4 g。试验组在对照组的基础上,加用大黄红藤煎加减进行中西医结合治疗,大黄红藤煎加减药方配伍参考文献[7]。7 d 为一个治疗疗程,两组患者进行 2 个治疗疗程,严格遵照医嘱,严禁辛辣、刺激食物,严禁性生活及服用其他药物。

4.2 疗效评价

4.2.1 治疗效果对比 ①治愈:患者临床症状及体征消失,各项检查结果恢复正常;②显效,患者临床症状及体征得到显著改善,各项检查结果趋于正常水平;③有效,患者临床症状及体征有所缓解,各项检查结果较治疗前有所改善;④无效,患者临床症状、体征及各项检查结果未发生改善甚至加重。总有效率=(治愈人数+显效人数+有效人数)/总人数 $\times 100\%$ 。

4.2.2 临床症状消失时间 统计两组患者,经治疗后,各项临床症状消失的时间,包括腹痛消失时间、尿频尿急消失时间、阴道黏膜充血消失时间及体温恢复正常时间。

4.2.3 治疗前后炎症因子水平对比 患者进行治疗前及治疗结束后,检测炎症因子水平。抽取患者空腹静脉血 3~5 mL,3 000 r/min 离心(离心半径 15 cm)离心 15 min,取上清液,于 -20 °C 环境中进行保存。肿瘤坏死因子- α (tumor necrosis factor- α , TNF- α)水平采用酶联免疫吸附法进行测定,C 反应蛋白(C-reactive protein, CRP)水平采用免疫散射比浊法进行测定,白细胞介素-6(inter leukin-6, IL-6)水平采用 ELISA 法进行测定。

5 统计分析

采用 SPSS 26.0 进行统计分析,对比慢性盆腔炎患者与急性盆腔炎患者病原菌构成比,对比慢性盆腔炎患者与对照组 UU、CT 感染及阴道炎症情况,对比试验组与对照组患者治疗效果、临床症状消失时间及治疗前后炎症因子水平,组间对比采用 χ^2 或 t 检验, $P < 0.05$ 为差异有统计学意义。

结 果

1 病原菌分布特点

110 例慢性盆腔炎患者,共检出病原菌 110 株,革兰阴性菌占比 61.82%,革兰阳性菌占比 38.18%。革兰阴性菌主要为大肠埃希菌和肺炎克雷伯菌,革兰阳性菌主要为凝固酶阴性葡萄球菌和金黄色葡萄球菌。80 例急性盆腔炎患者,共检出病原菌 80 株,革兰阴性菌占比 71.25%,革兰阳性菌占比 28.75%。革兰阴性菌主要为大肠埃希菌,革兰阳性菌主要为粪肠球菌。大肠埃希菌、凝固酶阴性葡萄球菌、粪肠球菌在两组患者病原菌中的构成比差异有统计学意义($P < 0.05$)。见表 1。

表 1 慢性盆腔炎患者与急性盆腔炎患者病原菌构成比情况对比分析
Table 1 Comparative analysis of the composition ratio of pathogenic bacteria in patients with chronic pelvic inflammatory disease and those with acute pelvic inflammatory disease

| 组别 Groups | 慢性盆腔炎患者 (n=110) Patients with chronic pelvic inflammatory disease | | 急性盆腔炎患者 (n=80) Patients with acute pelvic inflammatory disease | | χ^2 | P |
|--------------|---|--------------------------------|--|--------------------------------|----------|-------|
| | 菌株数 Number of strains | 构成比(%) Composition ratio | 菌株数 Number of strains | 构成比(%) Composition ratio | | |
| | 革兰阴性菌 | 68 | 61.82 | 57 | | |
| 大肠埃希菌 | 35 | 31.82 | 42 | 52.50 | 8.219 | 0.004 |
| 肺炎克雷伯菌 | 20 | 18.18 | 9 | 11.25 | 1.721 | 0.190 |
| 产酸克雷伯菌 | 6 | 5.45 | 1 | 1.25 | 2.307 | 0.129 |
| 阴沟肠杆菌 | 5 | 4.55 | 4 | 5.00 | 0.021 | 0.884 |
| 褪色沙雷菌 | 2 | 1.82 | 0 | 0.00 | 1.470 | 0.225 |
| 铜绿假单胞菌 | 0 | 0.00 | 1 | 1.25 | 1.382 | 0.240 |
| 革兰阳性菌 | 42 | 38.18 | 23 | 28.75 | 1.831 | 0.176 |
| 凝固酶阴性葡萄球菌 | 24 | 21.82 | 2 | 2.50 | 14.634 | 0.000 |
| 金黄色葡萄球菌 | 12 | 10.91 | 8 | 10.00 | 0.041 | 0.840 |
| 粪肠球菌 | 3 | 2.73 | 10 | 12.50 | 6.940 | 0.008 |
| 草绿色链球菌 | 2 | 1.82 | 1 | 1.25 | 0.096 | 0.756 |
| 李斯特菌 | 1 | 0.91 | 0 | 0.00 | 0.731 | 0.393 |
| 星座链球菌 | 0 | 0.00 | 2 | 2.50 | 2.779 | 0.095 |

2 慢性盆腔炎患者病因分析

对比慢性盆腔炎患者与对照组 UU、CT 感染及阴道炎症情况,慢性盆腔炎患者 UU、CT、BV、VC、TV、AV 感染率分别为 39.09%(43/110)、29.09%(32/110)、10.91%(12/110)、7.27%(8/110)、3.64%(4/110)和 2.73%(3/110);对照组分别为 9.09%(10/

110)、7.27%(8/110)、10.00%(11/110)、6.36%(7/110)、2.73%(3/110)、1.82%(2/110)。慢性盆腔炎患者UU、CT感染率显著高于对照组($\chi^2 = 27.068, 17.600$, 均 $P < 0.05$), 两组BV、VC、TV、AV感染率差异无统计学意义($\chi^2 = 0.049, 0.072, 0.148, 0.205$, 均 $P > 0.05$)。

3 中西医结合治疗临床效果分析

3.1 两组患者治疗效果对比 试验组患者中, 23例治愈(41.82%, 23/55), 20例显效(36.36%, 20/55), 7例有效(12.73%, 7/55), 5例无效(9.09%, 5/55), 总有效率为90.91%(50/55)。对照组患者中, 12例治愈(21.82%, 12/55), 16例显效(29.09%, 16/55), 11例有效(20%, 11/55), 16例无效(29.09%, 16/55), 总有效率为70.91%(39/55)。试验组患者治疗总有效率显著高于对照组患者($\chi^2 = 7.121, P < 0.05$)。

3.2 两组患者临床症状消失时间对比 试验组患者腹痛消失、尿频尿急消失、阴道黏膜充血消失、体温恢复正常时间分别为(2.44 ± 1.03)d、(3.02 ± 1.43)d、(2.02 ± 0.78)d、(2.35 ± 0.95)d; 对照组分别为(4.22 ± 1.07)d、(5.35 ± 1.40)d、(3.64 ± 1.25)d、(4.75 ± 1.34)d; 两组患者临床症状消失时间差异有统计学意义($t = -8.905, -8.602, -8.128, -10.867$, 均 $P < 0.05$)。

3.3 两组患者治疗前后炎症因子水平对比 两组患者治疗前各项炎症因子水平差异无统计学意义($P > 0.05$), 治疗后差异有统计学意义($P < 0.05$)。见表2。

表2 两组患者治疗前后炎症因子水平对比($\bar{x} \pm s$)
Table 2 Comparison of inflammatory factor levels before and after treatment in the two groups of patients

| 组别 Groups | 试验组(n=55) Experimental group | 对照组(n=55) Control group | t | P |
|--------------------------|---------------------------------|----------------------------|---------|-------|
| 治疗前 TNF- α (ng/L) | 60.22 ± 8.47 | 60.71 ± 7.76 | -0.318 | 0.751 |
| 治疗后 TNF- α (ng/L) | 31.16 ± 10.41 | 47.05 ± 6.68 | -9.531 | 0.000 |
| 治疗前 CRP(mg/L) | 329.53 ± 7.49 | 30.18 ± 6.68 | -0.486 | 0.628 |
| 治疗后 CRP(mg/L) | 4.74 ± 1.43 | 13.07 ± 3.52 | -16.263 | 0.000 |
| 治疗前 IL-6(ng/mL) | 46.85 ± 11.59 | 47.37 ± 9.47 | -0.260 | 0.795 |
| 治疗后 IL-6(ng/mL) | 13.06 ± 4.24 | 21.00 ± 7.03 | -7.168 | 0.000 |

讨论

女性生殖道由上生殖道与下生殖道组成, 当女性机体免疫力下降或阴道菌群失衡时, 病原菌可通过下生殖道行至上生殖道, 从而引发盆腔炎, 病原菌多以混合型感染为主^[8-9]。凝固酶阴性葡萄球菌、大肠埃希菌、肺炎克雷伯菌等病原菌可通过上行感染等方式进入盆腔后, 会导致炎症持续加重, 需要采取抗菌治疗^[10]。本次研究中, 110例慢性盆腔炎患者共检出病原菌110株, 61.82%为革兰阴性菌, 以大肠埃希菌和凝固酶阴性葡萄球菌为主要病原菌。80例急性盆腔

炎患者共检出病原菌80株, 71.25%为革兰阴性菌, 以大肠埃希菌和粪肠球菌为主。急性盆腔炎患者大肠埃希菌、凝固酶阴性葡萄球菌占比低于慢性盆腔炎患者, 粪肠球菌占比显著高于慢性盆腔炎患者。

本次研究通过对比慢性盆腔炎患者与对照组UU、CT感染及阴道炎症情况, 慢性盆腔炎患者UU、CT感染率显著高于对照组, 差异有统计学意义。与曹俊岩等^[11]研究结果相近。相关研究发现, UU、CT与阴道微生态状态密切相关, UU、CT感染可导致阴道分泌物中过氧化、唾液酸苷酶、白细胞酯酶等指标阳性, 可进一步促进机体免疫炎症加剧, 促进慢性盆腔炎的发生和进展^[12]。同时, UU、CT会侵入生殖道黏膜上皮细胞调控上皮细胞 miRNA 水平, 影响上皮细胞表达相关抗原, 促进上皮间质转化, 引发多种病变^[13]。

本次研究将110例慢性盆腔炎患者按照随机抽样法分成试验组和对照组, 对照组采用传统西医治疗, 试验组在对照组基础上加大黄红藤煎加减进行中西医结合治疗, 试验组患者总有效率显著高于对照组患者。试验组患者腹痛消失时间、尿频尿急消失时间、阴道黏膜充血消失时间及体温恢复正常时间均短于对照组患者水平。两组患者治疗前各项炎症因子水平差异无统计学意义, 治疗后试验组患者TNF- α 、CRP、IL-6水平低于对照组患者。西医认为慢性盆腔炎是由多种致病菌所引发的一系列炎症反应, 而盆腔炎在中医中属于“带下病”范畴, 主要由于湿热蕴结造成患者体内气血阻滞, 临床治疗重点在于清热解毒、活血化瘀^[14]。大黄红藤煎加减方中, 益母草具有活血调经、清热解毒的作用, 鸭跖草可利尿, 甘草可补脾益气、缓急止痛, 与西医联合使用治疗慢性盆腔炎, 可有效缓解患者临床症状^[15]。

综上所述, 慢性盆腔炎患者盆腔液病原菌主要为大肠埃希菌、凝固酶阴性葡萄球菌, UU、CT感染率较高。中西医结合治疗可有效缩短患者临床症状持续时间, 降低患者炎症因子水平, 临床治疗效果优于单纯西药治疗。

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持胸腔引流通畅;③切口换药过程中,严格执行无菌操作,避免切口遭到污染;④保证病房环境,定期进行消毒、通风等;⑤为患者制定合理的康复锻炼方案^[16]。护理人员应积极提高对胸腔感染的认识与护理水平,保持警惕性和责任心,制定针对性保护措施,提升患者机体免疫力,减少侵入性操作频率,合理使用抗菌药物。

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