

· 临床研究 ·

老年前列腺增生患者生活质量调查及其与下尿路症状和情绪障碍的相关性

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【摘要】目的 探讨老年前列腺增生(BPH)患者生活质量、下尿路症状(LUTS)及情绪障碍三者的相关性。**方法** 选择澄迈县人民医院2021年1月至2023年1月收治的155例老年BPH患者为研究对象。采用修订版良性前列腺增生症患者生活质量量表(BPHQLS)、国际前列腺症状问卷调查表(IPSS)、膀胱过度活动评分量表(OABSS)及焦虑自评量表(SAS)调查患者生活质量、LUTS及焦虑情绪。采用SPSS 19.0统计软件进行数据处理。根据数据类型采用 t 检验或 χ^2 检验进行组间比较。采用Pearson相关分析患者LUTS、情绪障碍及生活质量三者的相关性。采用AMO 25.0构建结构方程模型分析焦虑情绪在老年BPH患者LUTS与生活质量间的中介效应(标准化)。**结果** 6份问卷无效, 问卷回收有效率为96.13%(149/155)。老年BPH患者BPHQLS平均得分(97.45 ± 12.16)分, IPSS平均得分(12.21 ± 2.79)分, OABSS平均得分(8.96 ± 2.03)分, SAS平均得分(48.56 ± 8.89)分, 焦虑发生率为71.14%(106/149)。老年BPH患者SAS评分高于国人常模水平[(48.56 ± 8.79)和(37.22 ± 9.72)分], 差异有统计学意义($P < 0.05$)。IPSS轻中度组患者BPHQLS评分高于重度组[(107.12 ± 13.45)和(86.25 ± 12.05)分]; SAS评分低于重度组[(44.14 ± 7.96)和(56.59 ± 8.87)分], 差异有统计学意义($P < 0.05$)。合并焦虑的老年BPH患者BPHQLS得分低于无焦虑者, IPSS及OABSS得分均高于无焦虑者[(92.34 ± 12.58)和(110.06 ± 14.16)分, (13.29 ± 2.69)和(9.56 ± 2.94)分, (9.50 ± 2.17)和(7.65 ± 2.26)分], 差异均有统计学意义($P < 0.05$)。Pearson相关性分析提示, 老年BPH患者生活质量BPHQLS得分与下尿路症状IPSS及OABSS量表得分, SAS量表得分均呈负相关($r = -0.411, -0.395, -0.406; P < 0.05$); IPSS、OABSS量表得分与焦虑症状SAS量表得分均呈正相关($r = 0.443, 0.451; P < 0.05$)。LUTS对生活质量有直接负向预测作用($\beta = -0.321; P < 0.05$), 并可通过焦虑情绪间接(负向)影响生活质量($\beta = -0.196; P < 0.05$), 总效应为 -0.517 。焦虑情绪对生活质量有直接(负向)效应($\beta = -0.269; P < 0.05$)。采用Bootstrap法对数据重复取样后进行中介效应, 各模型的路径95%CI均不包括0, 提示中介效应均有统计学意义($P < 0.05$)。**结论** 有效疏导老年BPH患者情绪障碍, 尽快采取有效措施改善其LUTS, 对于提高患者生活质量具有重要意义。

【关键词】 老年人; 良性前列腺增生; 生活质量; 下尿路症状; 情绪障碍

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Investigation of quality of life in elderly patients with benign prostatic hyperplasia and its correlation with lower urinary tract symptoms and emotional disorders

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【Abstract】Objective To explore the correlation between quality of life and lower urinary tract symptoms (LUTS) and emotional disorders in the elderly patients with benign prostatic hyperplasia (BPH). **Methods** We enrolled 155 elderly BPH patients admitted to Chengmai County People's Hospital from January 2021 to January 2023. Their quality of life, LUTS and anxiety were investigated using revised version of quality-of-life scale for benign prostatic hyperplasia (BPHQLS), international prostate symptom score (IPSS), overactive bladder symptom scale (OABSS) and self-rating anxiety scale (SAS). SPSS statistics 19.0 was used for data processing, and t test or χ^2 test was performed for inter-group comparisons according to the data type. Pearson correlation was performed to analyze the correlation between LUTS, emotional disorders and quality of life. A structural equation model was constructed using AMO 25.0 for the mediating effect of anxiety on LUTS and quality of life in the elderly BPH patients (standardized). **Results** The valid

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questionnaire recovery rate was 96.13% (149/155) with six invalid questionnaires. The elderly BPH patients averaged (97.45±12.16) points on QLS-BPH, (12.21±2.79) points on IPSS, (8.96±2.03) points on OABSS and (48.56±8.89) points on SAS, and the incidence of anxiety was 71.14% (106/149). SAS score in the elderly BPH patients was higher than that of Chinese norm [(48.56±8.79) vs (37.22±9.72) points], and the difference was statistically significant ($P < 0.05$). The QLS-BPH score in the mild-to-moderate IPSS group was higher than that in the severe group [(107.12±13.45) vs (86.25±12.05) points], the SAS score was lower than that in severe group [(44.14±7.96) vs (56.59±8.87) points], and the differences were statistically significant ($P < 0.05$). Compared with the BPH patients without anxiety, those with anxiety had lower QLS-BPH score [(92.34±12.58) vs (110.06±14.16) points], but higher scores on IPSS [(13.29±2.69) vs (9.56±2.94) points] and OABSS [(9.50±2.17) vs (7.65±2.26) points], and the differences were statistically significant ($P < 0.05$). Pearson correlation analysis indicated that the QLS-BPH score in the elderly BPH patients was negatively correlated with IPSS score for LUTS, OABSS score and SAS score ($r = -0.411, -0.395, -0.406; P < 0.05$). IPSS and OABSS score were positively correlated with SAS score ($r = 0.443, 0.451; P < 0.05$). LUTS had a direct negative predictive effect on the quality of life ($\beta = -0.321; P < 0.05$) and an indirect (negative) effect on the quality of life through anxiety ($\beta = -0.196; P < 0.05$), with a total effect of -0.517 . Anxiety had a direct (negative) effect on the quality of life ($\beta = -0.269; P < 0.05$). After repeated sampling of data, Bootstrap method was used for mediating effect, and the 95%CI of each model did not include 0, suggesting that the mediating effect was statistically significant ($P < 0.05$). **Conclusion** Effectively easing emotional disorders and taking effective measures to improve LUTS as soon as possible are of great significance in improving the quality of life in the elderly BPH patients.

【Key words】 aged; benign prostatic hyperplasia; quality of life; lower urinary tract symptoms; emotional disorders

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流行病学统计发现,61~70岁老年男性良性前列腺增生(benign prostatic hyperplasia,BPH)患病率为70%,81~90岁男性BPH患病率为90%,BPH是引起中老年男性排尿障碍、危害其泌尿健康的主要病因^[1,2]。受到新兴医学模式的影响,临床逐渐意识到疾病的治疗应结合个体生理及心理特征^[3]。但大部分人对BPH存在错误认知,未能主动寻求治疗,BPH患者的情绪障碍及生活质量并没有受到社会的广泛关注。本研究对老年BPH患者生活质量、下尿路症状(lower urinary tract symptoms,LUTS)及情绪障碍三者的相关性进行分析。

1 对象与方法

1.1 研究对象

选择澄迈县人民医院2021年1月至2023年1月收治的155例老年BPH患者为研究对象。纳入标准:(1)年龄≥60岁;(2)确诊为BPH;(3)拟行外科手术治疗;(4)认知功能正常,可配合完成相关调查。排除标准:(1)近期经历负性生活事件;(2)合并听力、视力等功能缺陷;(3)合并尿道狭窄或尿道畸形。本研究经医院医学伦理委员会批准(伦理批号:2020078),参与者均知情且签署知情同意书。

1.2 方法

1.2.1 修订版良性前列腺增生患者生活质量量表 采用修订版良性前列腺增生患者生活质量量表(quality-of-life scale for benign prostatic hyperplasia,

BPHQLS)^[4]评价患者生活质量,量表得分指标>66%为高水平,33%~66%为中水平,<33%为低水平。

1.2.2 国际前列腺症状问卷调查表 国际前列腺症状问卷调查表(international prostate symptom score,IPSS)^[5]总评分范围0~35分,量表得分1~7分、8~19分及20~35分分别为轻度、中度及重度排尿功能障碍。

1.2.3 膀胱过度活动评分量表 膀胱过度活动评分量表(over-active bladder symptom scale,OABSS)^[6]中“尿急”问题得分>2分且OABSS总得分>3分时即可诊断为膀胱过度活动,总得分3~5分为轻度,6~11分为中度,≥12分为重度。

1.2.4 焦虑自评量表 焦虑自评量表(self-rating anxiety scale,SAS)^[7]共包含20个条目,各条目得分1~4分,分别代表偶尔有或无、时有、经常及持续,SAS量表得分≥40分即可判断存在焦虑症状。

1.3 统计学处理

采用SPSS 19.0统计软件进行数据处理。计量资料以均数±标准差($\bar{x} \pm s$)表示,组间比较采用 t 检验。计数资料以例数(百分率)表示,组间比较采用 χ^2 检验。采用Pearson相关分析老年BPH患者生活质量、LUTS及情绪障碍三者的相关性。采用AMO 25.0构建结构方程模型分析情绪障碍在老年BPH患者LUTS与生活质量中的中介效应。 $P < 0.05$ 为差异有统计学意义。

2 结果

2.1 患者 BPHQLS、IPSS、OABSS 及 SAS 量表得分情况

本研究问卷回收有效率为 96.13% (149/155)。老年 BPH 患者生活质量 BPHQLS 量表得分 62~141 (97.45±12.16) 分; IPSS 得分 15~30 (12.21±2.79) 分, 其中轻度、中度及重度症状者分别有 34 例、46 例、69 例; OABSS 得分 1~14 (8.96±2.03) 分, 轻度、中度及重度症状者分别 36 例、49 例、64 例; SAS 得分 36~54 (48.56±8.89) 分, 焦虑发生率为 71.14% (106/149)。此外, 老年 BPH 患者 SAS 评分高于国人常模水平 [(48.56±8.79) 和 (37.22±9.72) 分], 差异有统计学意义 ($t=16.337, P<0.05$)。

2.2 IPSS 轻中度组与重度组患者生活质量及焦虑情绪情况比较

IPSS 轻中度组患者 BPHQLS 评分高于重度组 [(107.12±13.45) 和 (86.25±12.05) 分], 差异有统计学意义 ($t=11.806, P<0.001$); SAS 评分低于重度组 [(44.14±7.96) 和 (56.59±8.87) 分], 差异有统计学意义 ($t=9.029, P<0.001$)。

2.3 焦虑对患者生活质量及下尿路症状的影响

合并焦虑的老年 BPH 患者 BPHQLS 得分低于无焦虑者, IPSS 及 OABSS 得分均高于无焦虑者, 差异均有统计学意义 ($P<0.05$; 表 1)。

表 1 焦虑对患者生活质量及下尿路症状的影响

Table 1 Effect of anxiety on quality of life and lower urinary tract symptoms (points, $\bar{x}\pm s$)

Group	n	BPHQLS	IPSS	OABSS
Anxiety	106	92.34±12.58	13.29±2.69	9.50±2.17
Non-anxiety	43	110.06±14.16	9.56±2.94	7.65±2.26
t		7.510	7.465	4.659
P value		<0.001	<0.001	<0.001

BPHQLS: quality-of-life scale for benign prostatic hyperplasia patient; IPSS: international prostate symptom score; OABSS: over-active bladder symptom scale.

2.4 患者生活质量、下尿路症状及焦虑的相关性

Pearson 相关性分析提示, 老年 BPH 患者 BPHQLS 得分与 IPSS 及 OABSS 量表得分、SAS 量表得分之间均呈负相关 ($r=-0.411, -0.395, -0.406; P<0.05$); IPSS、OABSS 量表得分与 SAS 量表得分均呈正相关 ($r=0.443, 0.451; P<0.05$)。

2.5 焦虑情绪在老年 BPH 患者 LUTS 症状与生活质量中的中介效应分析

以 LUTS 作为自变量, 生活质量作为因变量, 焦虑情绪作为中介变量, 构建中介效应结构模型, 结果

表明 $\chi^2/df=4.11 (<5)$, 拟合优度指数 (goodness-of-fit index, GFI)=0.867, 调整后的拟合优度指数 (the adjusted goodness of fit index, AGFI)=0.871, 增值拟合指数 (incremental fit index, IFI)=0.896, 比较拟合指数 (comparative Fit Index, CFI)=0.499, 简约调整规范适配指数 (parsimonious normed fit index, PNFI)=0.611, 均达到推荐标准, 证实模型拟合较好。

LUTS 症状对生活质量有直接负向预测作用 ($\beta=-0.321; P<0.05$), 并可通过焦虑情绪间接 (负向) 影响生活质量 ($\beta=-0.196; P<0.05$), 总效应为 -0.517。焦虑情绪对生活质量有直接 (负向) 效应 ($\beta=-0.269; P<0.05$)。采用 Bootstrap 法对数据重复取样后进行中介效应, 各模型的路径 95%CI 均不包括 0, 提示中介效应均有统计学意义 ($P<0.05$; 表 2)。

表 2 焦虑情绪在患者 LUTS 与生活质量中的中介效应 (标准化)

Table 2 Mediating effect of anxiety on LUTS and quality of life (standardized)

Independent variable	Dependent variable	Direct effect	Indirect effect	Total effect
LUTS symptoms	Quality of life	-0.321	-0.196	-0.517
LUTS symptoms	Anxiety	0.415	-	0.415
Anxiety	Quality of life	-0.269	-	-0.269

LUTS: lower urinary tract symptoms. -: no datum.

3 讨论

据调查, 60 岁及以上 BPH 患者中有 1/3 遭受过中重度 LUTS, 而在 70 岁及以上 BPH 患者中, 这一比例升高至 45%^[8,9]。IPSS 与 OABSS 量表一起使用可较为全面地反映患者 LUTS 严重程度^[10]。本研究中, 老年 BPH 患者 LUTS 整体严重程度处于中等水平。LUTS 症状反复长期存在降低患者生活质量, 同时影响患者心理健康^[11,12]。本研究中, 老年 BPH 患者 SAS 平均得分明显高于国人常模, 提示老年 BPH 患者普遍存在焦虑症状, 焦虑情况较为严重。

本研究结果显示, IPSS 轻中度组患者生活质量量表 BPHQLS 评分高于重度组, 而 SAS 评分低于重度组, 且合并焦虑症状者的 IPSS 及 OABSS 得分均高于无焦虑者, BPHQLS 量表评分低于无焦虑者。相关性分析提示, 老年 BPH 患者 BPHQLS 得分与 IPSS 及 OABSS 量表得分、SAS 量表得分之间均呈负相关, 此外, IPSS、OABSS 量表得分与 SAS 量表得分均呈正相关。说明 LUTS 症状将增加患者焦虑情绪, 而焦虑情绪反过来也会加重 LUTS, 而 LUTS 严

重及合并焦虑情绪均会降低患者生活质量,与张凯等^[13]研究结果一致。

此外,经中介效应分析提示,LUTS对生活质量有直接负向预测作用,且LUTS还可通过焦虑情绪间接影响生活质量,同时焦虑情绪对生活质量也有直接效应。因此,建议临床积极关注老年BPH患者情绪障碍问题,对存在焦虑情绪者积极进行心理疏导,改善焦虑情绪。LUTS严重者还应积极进行手术治疗,以改善LUTS对情绪及生活质量的影响^[14,15]。

综上,有效疏导老年BPH患者焦虑情绪,尽快采取有效措施改善其LUTS,对提高患者生活质量具有重要意义。

【参考文献】

- [1] Wang W, Guo Y, Zhang D, *et al.* The prevalence of benign prostatic hyperplasia in mainland China: evidence from epidemiological surveys[J]. *Sci Rep*, 2015, 5: 13546. DOI: 10.1038/srep13546.
- [2] Zhu C, Wang DQ, Zi H, *et al.* Epidemiological trends of urinary tract infections, urolithiasis and benign prostatic hyperplasia in 203 countries and territories from 1990 to 2019[J]. *Mil Med Res*, 2021, 8(1): 64. DOI: 10.1186/s40779-021-00359-8.
- [3] Niu C, Huang X, Wang L, *et al.* Effect of hospital, community and home care model on nursing and quality of life of patients after transurethral resection of benign prostatic hyperplasia[J]. *Am J Transl Res*, 2021, 13(5): 4959-4968.
- [4] 郭燕芳, 史静琤, 胡明, 等. 良性前列腺增生症患者生活质量量表的修订与考评——量表的修订及条目筛选方法[J]. *中国卫生统计*, 2007, 24(5): 453-455. DOI: 10.3969/j.issn.1002-3674.2007.05.002.
- [5] Dun RL, Mao JM, Yu C, *et al.* Simplified Chinese version of the international prostate symptom score and the benign prostatic hyperplasia impact index: cross-cultural adaptation, reliability, and validity for patients with benign prostatic hyperplasia[J]. *Prostate Int*, 2022, 10(3): 162-168. DOI: 10.1016/j.pnil.2022.04.001.
- [6] Takeuchi Y, Sawada Y, Watanabe S, *et al.* Age-specific effect of transurethral holmium laser enucleation of the prostate on overactive bladder in men with benign prostatic hyperplasia: an investigation using an overactive bladder symptom score[J]. *Low Urin Tract Symptoms*, 2023, 15(2): 38-49. DOI: 10.1111/luts.12469.
- [7] Zhou ZX, Chen HB, Liu W, *et al.* Prostatic artery embolization for high-risk patients with benign prostatic hyperplasia: a clinical effect observation[J]. *Natl J Androl*, 2021, 27(3): 226-230.
- [8] Lerner LB, McVary KT, Barry MJ, *et al.* Management of lower urinary tract symptoms attributed to benign prostatic hyperplasia: AUA guideline part I-Initial work-up and medical management[J]. *J Urol*, 2021, 206(4): 806-817. DOI: 10.1097/JU.0000000000002183.
- [9] Franco JV, Jung JH, Imamura M, *et al.* Minimally invasive treatments for lower urinary tract symptoms in men with benign prostatic hyperplasia: a network meta-analysis[J]. *Cochrane Database Syst Rev*, 2021, 7(7): CD013656. DOI: 10.1002/14651858.CD013656.pub2.
- [10] Gotoh D, Torimoto K, Morizawa Y, *et al.* Efficacy and safety of dutasteride with tadalafil add-on therapy in patients with lower urinary tract symptoms secondary to benign prostatic hyperplasia[J]. *BMC Res Notes*, 2022, 15(1): 288. DOI: 10.1186/s13104-022-06183-0.
- [11] AbdelRazek M, Abolyosr A, Mhammed O, *et al.* Prospective comparison of tadalafil 5 mg alone, silodosin 8 mg alone, and the combination of both in treatment of lower urinary tract symptoms related to benign prostatic hyperplasia[J]. *World J Urol*, 2022, 40(8): 2063-2070. DOI: 10.1007/s00345-022-04071-7.
- [12] Chughtai B, RojanSASrot S, Neeser K, *et al.* A comprehensive analysis of clinical, quality of life, and cost-effectiveness outcomes of key treatment options for benign prostatic hyperplasia[J]. *PLoS One*, 2022, 17(4): e0266824. DOI: 10.1371/journal.pone.0266824.
- [13] 张凯, 贺利军, 虞巍, 等. 22~50岁中国人精神心理健康状况与下尿路症状及阴茎勃起功能障碍的相关性[J]. *北京大学学报(医学版)*, 2013, 45(4): 609-612. DOI: 10.3969/j.issn.1671-167X.2013.04.023.
- [14] Park S, Lee KS, Choi M, *et al.* Factors associated with quality of life in patients with benign prostatic hyperplasia, 2009-2016[J]. *Medicine (Baltimore)*, 2022, 101(36): 30091. DOI: 10.1097/MD.00000000000030091.
- [15] Sugimoto M, Hijikata Y, Tohi Y, *et al.* Low quality of life in men with chronic prostatitis-like symptoms[J]. *Prostate Cancer Prostatic Dis*, 2022, 25(4): 785-790. DOI: 10.1038/s41391-022-00559-w.

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