doi: 10.13241/j.cnki.pmb.2021.06.029

终末期肾脏病患者睡眠质量的影响因素及其与生活质量、焦虑抑郁的关系研究*

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摘要 目的:探讨终末期肾脏病(ESRD)患者睡眠质量的影响因素及其与生活质量、焦虑抑郁的关系。**方法:**选取2018年3月~2019年12月期间我院收治的ESRD患者198例为研究对象。患者睡眠质量采用匹兹堡睡眠指数量表(PSQI)评价。采用焦虑自评量表(SAS)与抑郁自评量表(SDS)评估患者焦虑、抑郁状态。采用肾病生活质量评价量表(KDQOL-SF1.2)评价患者生活质量。分析ESRD患者睡眠质量的影响因素,并分析睡眠质量与生活质量、焦虑抑郁的相关性。**结果:**ESRD患者中约有93例发生睡眠障碍,睡眠障碍发生率为46.97%(93/198),并将其纳入睡眠障碍组,剩余的105例纳入非睡眠障碍组。非睡眠障碍组KDQOL-SF 1.2评分高于睡眠障碍组,SAS评分、SDS评分则低于睡眠障碍组(P<0.05)。单因素分析结果显示,两组年龄、透析龄、血红蛋白、甲状旁腺激素(iPTH)、血肌酐(Scr)、血钙、血磷比较差异显著(P<0.05),两组性别、配偶、经济收入、文化程度、血清白蛋白、尿素氮(BUN)比较差异无统计学意义(P>0.05)。多重线性回归方程结果显示,年龄、透析龄、血红蛋白、iPTH、Scr、血钙、血磷均是ESRD患者睡眠障碍的影响因素(P<0.05)。PSQI评分与SAS评分、SDS评分均呈正相关,与KDQOL-SF 1.2评分呈负相关(P<0.05)。**结论:**ESRD患者睡眠障碍的发生率高,年龄、透析龄、血红蛋白、iPTH、Scr、血钙、血磷均是ESRD患者睡眠质量的影响因素,同时其睡眠质量与生活质量、焦虑抑郁具有一定的相关性。

关键词:终末期肾脏病;睡眠质量;影响因素;生活质量;焦虑抑郁

中图分类号:R692.5;R749.72 **文献标识码:**A **文章编号:**1673-6273(2021)06-1129-05

Influencing Factors of Sleep Quality and Its Relationship with Quality of Life, Anxiety and Depression in Patients with End-stage Renal Disease*

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ABSTRACT Objective: To investigate the influencing factors of sleep quality and its relationship with quality of life, anxiety and depression in patients with end-stage renal disease (ESRD). **Methods:** 198 cases of patients with ESRD in our hospital from March 2018 to December 2019 were selected as the research objects. The sleep quality of patients were evaluated by Pittsburgh sleep quality index (PSQI). Self rating Anxiety Scale (SAS) and self rating Depression Scale (SDS) were used to evaluate the anxiety and depression of patients. The quality of life of patients was evaluated by the kidney disease quality of life scale (KDQOL-SF 1.2). The influencing factors of sleep quality in patients with ESRD were analyzed, and correlation between sleep quality and quality of life, anxiety and depression wrre analyzed. **Results:** Among the patients with ESRD had 93 cases developed sleep disorders, the incidence rate of sleep disorders was 46.97% (93/198), which were included in the sleep disorders group, and the remaining 105 cases were included in the non-sleep disorders group. The KDQOL-SF 1.2 score of non-sleep disorder group was higher than that of sleep disorder group, SAS score and SDS score were lower than that of sleep disorder group (P<0.05). Univariate analysis showed that there were significant differences in age, dialysis age, hemoglobin, parathyroid hormone (iPTH), serum creatinine (Scr), serum calcium and serum phosphorus between the two groups (P<0.05), but there were no significant differences in gender, spouse, economic income, education level, serum albumin and urea nitrogen (BUN) between the two groups (P>0.05). The results of multiple linear regression equation showed that age, dialysis age, hemoglobin, iPTH, SCR, serum calcium and serum phosphorus were independent influencing factors of sleep disorder in patients with ESRD (P<0.05). PSQI score were positively correlated with SAS score and SDS score, and negatively correlated with KDQOL-SF 1.2 score (P<0.05). **Conclusion:** The incidence rate of sleep disorders in patients with ESRD is high. Age, dialysis age, hemoglobin, iPTH, Scr, serum calcium and serum phosphorus are independent influencing factors of sleep disorders in patients with ESRD, At the same time, its sleep quality is related to quality of life, anxiety and depression.

* 基金项目:国家自然科学基金项目(81170367);四川省医学科研课题项目(S16043)

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(收稿日期:2020-07-07 接受日期:2020-07-31)

Key words: End-stage renal disease; Sleep quality; Influencing factors; Quality of life; Anxiety and depression
Chinese Library Classification(CLC): R692.5; R749.72 Document code: A
Article ID: 1673-6273(2020106-1129-05

前言

终末期肾脏病（ESRD）是指各种慢性肾脏疾病的终末阶段，维持性血液透析是治疗该病的重要方式之一[1-3]。尽管近年来 ESRD 治疗取得了很大的进展，但是患者生存率仍然较低。睡眠障碍在 ESRD 特别是在那些接受维持性血液透析的 ESRD 患者中相当常见[4]。据统计[5]，接受维持性血液透析的 ESRD 患者中约有 50%~75%的患者伴有睡眠障碍，远远高于普通人群的 4%~29%。睡眠质量差可导致患者生理节律紊乱，活动能力降低，严重影响患者生活质量[6]。此外，ESRD 患者在疾病负担、长期透析治疗折磨、经济负担等方面的影响下，极易引发焦虑抑郁等负性情绪，进一步促使疾病恶化[7]。本研究通过探讨 ESRD 患者睡眠质量的影响因素及其与生活质量、焦虑抑郁的关系，以期为其临床干预提供参考。

1 资料与方法

1.1 一般资料

选取 2018 年 3 月 ~2019 年 12 月我院收治的 ESRD 患者 198 例为研究对象，本研究已经获得我院伦理委员会批准，其中男 92 例，女 106 例，年龄 44~76 岁，平均(51.32± 5.69)岁，纳入标准：(1)血液透析治疗时间大于 3 个月；(2)神志清楚，无认知障碍；(3)临床资料完整；(4)同意参加本研究并签署知情同意书。排除标准：(1)既往有严重睡眠障碍史者；(2)合并脑卒中后遗症、急性感染、恶性肿瘤、严重心肺疾病者；(3)长期从事夜间工作者；(4)不配合调查或不能完整回答问卷者。

1.2 研究方法

1.2.1 睡眠质量评定 患者睡眠质量采用匹兹堡睡眠指数量表(PSQI)[8]评价。PSQI 包括 23 个条目，分为 7 个大项目：睡眠障碍、自觉睡眠质量、睡眠时间、日间功能障碍、入睡延迟、睡眠效率、催眠药物，每个项目按 0~3 等级记分，总分≤ 5 分则为非睡眠障碍，总分＞5 分定为睡眠障碍。

1.2.2 临床资料 自行设计临床资料调查问卷收集患者临床资料，包括：年龄、透析龄、性别、配偶、经济收入、文化程度，患者的实验室指标：血清白蛋白、血红蛋白、血清甲状旁腺激素(iPTH)、尿素氮(BUN)、血肌酐(Scr)、血钙、血磷水平。

1.2.3 焦虑抑郁 采用焦虑自评量表(SAS)[9]与抑郁自评量表(SDS)[10]评估患者焦虑、抑郁状态，其中 SAS、SDS 均由 20 个项目组成，每个项目按 1~4 等级记分，总分为各小项得分之和再乘以 1.25。分值越高，焦虑、抑郁程度越重。

1.2.4 生活质量 采用肾病生活质量评价量表(KDQOL-SF1.2)[11]评价患者生活质量，其中 KDQOL-SF 1.2 包含肾病相关生活质量(KDTA)、健康调查简表(SF-36)两部分，SF-36 分为 8 个维度，包括生理功能、一般健康状况、生理职能、精神健康、躯体疼痛、情感职能、总体健康、社会功能及精力；KDTA 包括透析相关症状、肾脏病的影响、肾脏病的负担、认知功能、工作状态、社交质量、性功能、睡眠、社会支持、透析工作人员的支持、患者满意度。范围 0～100 分，分值越高则生活质量越好。

1.3 统计学分析

采用 SPSS 25.00 进行数据分析，KDQOL-SF 1.2 评分、SAS 评分、SDS 评分等计量资料以($\bar{x}\pm s$)表示，对比采用 t 检验。男女比例等计数资料采用例(%)表示，采用卡方检验。单因素及多重线性回归分析 ESRD 患者睡眠质量的影响因素，Pearson 相关分析 PSQI 评分与 KDQOL-SF 1.2 评分、SAS 评分、SDS 评分之间相关性。检验水准 α=0.05。

2 结果

2.1 ESRD 患者中睡眠障碍发生率

ESRD 患者中约有 93 例发生睡眠障碍，睡眠障碍发生率为 46.97%(93/198)，并将其纳入睡眠障碍组。剩余的 105 例纳入非睡眠障碍组。

2.2 睡眠障碍组、非睡眠障碍组 KDQOL-SF 1.2 评分、SAS 评分、SDS 评分比较

非睡眠障碍组 KDQOL-SF 1.2 评分高于睡眠障碍组，SAS 评分、SDS 评分则低于睡眠障碍组(P<0.05)，详见表 1。

表 1 睡眠障碍组、非睡眠障碍组 KDQOL-SF 1.2 评分、SAS 评分、SDS 评分比较($\bar{x}\pm s$，分)

Table 1 Comparison of KDQOL-SF 1.2 score, SAS score and SDS score between sleep disorder group and non-sleep disorder group($\bar{x}\pm s$, score)

Groups	KDQOL-SF 1.2 score	SAS score	SDS score
Sleep disorders group(n=93)	34.22± 4.21	53.96± 6.27	57.06± 4.35
Non-sleep disorders group(n=105)	62.81± 7.23	38.65± 5.20	42.39± 5.27
t	33.147	18.773	21.199
P	0.000	0.000	0.000

2.3 ESRD 患者睡眠质量影响因素的单因素分析

单因素分析结果显示，两组年龄、透析龄、血红蛋白、iPTH、Scr、血钙、血磷比较差异显著(P＜0.05)，两组性别、配偶、文化程度、血清白蛋白、经济收入、BUN 比较无差异(P>0.05)，详见表 2。

2.4 ESRD 患者睡眠质量影响因素的多重线性回归分析

以 PSQI 评分为因变量，年龄、透析龄、血红蛋白、iPTH、Scr、血钙、血磷为自变量(均为连续性变量，以原值输入)，建立多重线性回归方程，逐步法排除无关变量(α 出 =0.01，α 入 =0.05)，结果显示，年龄、透析龄、血红蛋白、iPTH、Scr、血钙、血磷

均是影响 ESRD 患者睡眠质量的影响因素（$P<0.05$）。见表3。

表 2 ESRD 患者睡眠质量影响因素的单因素分析

Table 2 Univariate analysis of influencing factors of sleep quality in patients with ESRD

Factors	Sleep disorders group (n=93)	Non-sleep disorders group (n=105)	t/x^2	P
Age(years)	55.18± 5.24	47.91± 6.34	8.728	0.000
Dialysis age(months)	34.02± 5.38	25.98± 4.31	11.611	0.000
Gender				
Male	43(46.24)	49(46.67)	0.004	0.952
Female	50(53.76)	56(53.33)		
Spouse				
Yes	51(54.84)	62(59.05)	0.357	0.550
No	42(45.16)	43(40.95)		
Economic income (yuan/month)				
≤ 3000	21(22.58)	29(27.62)	0.492	0.431
3000~6000	32(34.41)	41(39.05)		
≥ 6000	40(43.01)	35(33.33)		
Education level				
Rimary school and below	27(29.03)	32(30.48)	0.567	0.382
Junior high school	38(40.86)	45(42.86)		
College or above			28(30.11)	28(26.67)
Serum albumin(g/L)	37.57± 4.25	37.49± 5.21	0.117	0.907
Hemoglobin(g/L)	102.34± 12.25	118.37± 13.27	8.794	0.000
iPTH(pmol/L)	357.93± 26.92	217.83± 29.36	34.839	0.000
BUN(mmol/L)	22.24± 3.17	21.89± 3.74	0.705	0.481
Scr(μmol/L)	757.32± 47.31	517.66± 31.23	42.502	0.000
Serum calcium (mmol/L)	1.64± 0.33	2.76± 0.47	19.171	0.000
Serum phosphorus (mmol/L)	2.48± 0.47	1.52± 0.38	15.877	0.000

表 3 ESRD 患者睡眠质量的多重线性回归分析

Table 3 Multiple linear regression analysis of influencing factors sleep quality in patients with ESRD

Variable	Coefficient of non standardization		Standard coefficient	t	P
	β	Standard error			
Age	1.196	0.387	0.176	3.016	0.004
Dialysis age	1.369	0.428	0.226	3.174	0.002
Hemoglobin	-0.298	0.012	-0.187	-3.083	0.003
iPTH	0.002	0.001	0.283	4.197	0.000
Scr	0.002	0.001	0.172	2.934	0.007
Serum calcium	-1.386	0.012	-0.196	-1.967	0.009
Serum phosphorus	0.652	0.426	0.124	2.037	0.008

2.5 ESRD 患者 PSQI 评分与 KDQOL-SF 1.2 评分、SAS 评分、SDS 评分的相关性

经 Pearson 相关性分析可得，PSQI 评分与 SAS 评分、SDS 评分均呈正相关（r=0.513、0.527，P=0.045、0.041），与

KDQOL-SF 1.2 评分呈负相关(r=-0.502,*P*=0.047)。

3 讨论

睡眠是重要的生理现象，睡眠良好利于机体免疫功能恢复、维持正常生理活动、新陈代谢的正常运行等[12,13]。而广义的睡眠障碍包括各种原因导致的失眠、过度嗜睡、睡眠行为异常及睡眠呼吸障碍等[14]。在普通人群中,睡眠障碍的发生率较低,而在 ESRD 患者中则是普遍存在的现象[15-17]。睡眠障碍的发病机制不明,目前相关研究及工作多集中在对睡眠障碍的影响因素进行调查,并通过对影响因素进行干预以使患者睡眠状况得以改善。

本次研究显示,ESRD 患者中约有 93 例发生睡眠障碍,睡眠障碍发生率为 46.97%。刘莉华等[18]学者通过分析维持性血液透析患者睡眠质量影响因素,结果发现睡眠质量差者占其所选取的总维持性血液透析患者的 52.30%，与本次研究结果相接近。可见 ESRD 患者睡眠障碍的发生率普遍偏高,应予以相关重视及干预[19]。进一步分析其影响因素发现,年龄、透析龄是 ESRD 患者睡眠质量的影响因素[20]。分析其原因,老年人群睡眠时间较其他人群短,加上疾病疼痛的折磨、各脏器功能的衰减、长期存在的不良生活习惯,极易造成神经兴奋,入睡困难,故睡眠质量较低[21-23]。透析龄越长的患者置管时间也相对较长,长期的置管易导致患者出现不适感,如疼痛、麻木等,加之透析时间越长花费越多,加重经济负担,患者常需承受身体、心理负担,故睡眠质量较差[24]。通过对患者实验室指标观察发现,血红蛋白、iPTH、Scr、血钙、血磷也是其睡眠质量的影响因素。表明上述实验室指标异常会提高 ESRD 患者发生睡眠障碍的风险,这类指标异常的患者应引起临床重视。iPTH 水平亢进可导致神经系统损害及心血管疾病，进而影响 ESRD 患者睡眠质量[25]。而 iPTH 水平亢进的原因通常为钙磷代谢紊乱，并造成 ESRD 患者的多重损伤,如缩短红细胞寿命,血红蛋白水平降低,甚至导致脂质、碳水化合物代谢异常,血管硬化,心血管疾病发生风险增加,身体上的不适最终对患者睡眠质量造成一定影响。Scr 是肾功能检测的常见指标,可有效反映肾功能病变程度,Inami 等[26]发现患者睡眠质量低是肾功能下降的潜在影响因素,与本次研究结果基本一致。临床可针对 ESRD 患者可能存在的影响因素给予针对性护理,以提高其睡眠质量。本研究样本量、研究时间有限,调查影响因素较少,未能研究患者心理素质等因素带来的影响,所得结果并不全面,还应在后期进行多中心、前瞻性、延长研究时间等方面分析,以便进行综合干预改善 ESRD 患者睡眠质量。

近年来 ESRD 的患病率不断增加,而血液透析技术虽然也在逐渐进步,得以延长 ESRD 患者的生命,但对 ESRD 患者生活质量的改善却收效甚微 [27]。随着 ESRD 患者生活质量的下降,其会产生焦虑抑郁等负性情绪,并导致精神活动效率下降,影响社会功能[28-30]。焦虑、抑郁、睡眠障碍及生活质量下降均已成为 ESRD 患者的常见问题,但目前临床对其的重视程度远远不够，且未能有较好的解决方法。本次研究结果已证实,PSQI 评分与 SAS 评分、SDS 评分均呈正相关,与 KDQOL-SF 1.2 评分呈负相关。可见睡眠质量与焦虑抑郁互相影响,共同导致生活质量的下降，且这种影响还可促进 ESRD 患者疾病进展,增加病死风险。临床应考虑将改善睡眠障碍、缓解抑郁焦虑情绪、提高生活质量作为治疗 ESRD 患者方案的重要组成部分,以改善 ESRD 患者的预后及治疗效果。

综上所述,ESRD 患者睡眠障碍的发生率较高,年龄、透析龄、血红蛋白、iPTH、Scr、血钙、血磷均是 ESRD 患者睡眠质量的影响因素,同时其睡眠质量与生活质量、焦虑抑郁具有一定的相关性。

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