

· 新进展 ·

睡眠时长与脑卒中及其危险因素间关系的研究进展

王卫华*, 崔时贝, 纪晓雯, 张永葆

【摘要】 脑卒中是世界范围内主要的致死和致残原因。虽然多种传统的脑卒中危险因素(如高血压、糖尿病、血脂异常、心房颤动、肥胖等)已经被确定,然而不适当的睡眠时长却是近年来才被认识的脑卒中危险因素。越来越多的流行病学调查显示,睡眠时长和脑卒中存在关联。本文旨在对睡眠时长与脑卒中及其危险因素之间关系的研究进行综述,以提高医生对睡眠时长的认识,为脑卒中高危人群的脑卒中预防提供参考。

【关键词】 卒中;睡眠;危险因素;综述

【中图分类号】 R 743 **【文献标识码】** A DOI: 10.12114/j.issn.1007-9572.2019.00.631

王卫华,崔时贝,纪晓雯,等.睡眠时长与脑卒中及其危险因素间关系的研究进展[J].中国全科医学,2019,22(31):3897-3901. [www.chinagp.net]

WANG WH, CUI SB, JI XW, et al. Advances in research on association between sleep duration and stroke and its risk factors [J]. Chinese General Practice, 2019, 22 (31): 3897-3901.

Advances in Research on Association between Sleep Duration and Stroke and Its Risk Factors WANG Weihua*, CUI Shibe, JI Xiaowen, ZHANG Yongbao

Department of Neurology, Chaohu Hospital of Anhui Medical University, Chaohu 238000, China

*Corresponding author: WANG Weihua, Associate chief physician; E-mail: jackyow@163.com

【Abstract】 Stroke is a leading cause of death and disability worldwide. While numerous traditional risk factors (such as hypertension, diabetes, dyslipidemia, atrial fibrillation and obesity) have been identified for stroke, inappropriate sleep duration has only been considered as a risk factor in recent years. Various epidemiologic studies have associated stroke with sleep duration. The purpose of this review is to provide an update on the relationship between sleep duration and risk factors of stroke in order to increase doctors' awareness of sleep duration and to provide a reference for stroke prevention in the people who have high-risk factors of stroke.

【Key words】 Stroke; Sleep; Risk factors; Review

脑卒中已经成为全球范围内第二大致死原因,在我国脑卒中则为第一位致死原因,全世界每年约有1500万人首次发生脑卒中,其中约1/3患者发生死亡,存活的脑卒中患者中约有1/3留下了中度到重度的终身残疾^[1]。脑卒中的许多传统危险因素已经明确,如高血压、糖尿病、高脂血症、血脂异常、心房颤动、肥胖、吸烟等。近年来睡眠障碍也被确立为脑卒中的危险因素,其中不适当睡眠时长可能和脑卒中密切相关^[2-5]。本文旨在对睡眠时长与脑卒中及其危险因素之间关系的研究进行综述,以提高医生对睡眠时长的认识,为脑卒中高危人群的脑卒中预防提供参考。

1 睡眠时长与脑卒中风险

目前国际睡眠障碍分类第3版(ICSD3)定义成年人睡眠不足(短睡眠者)为每天睡眠时长<6h,睡眠过多(长睡眠者)为每天睡眠时长≥10h^[2]。2006年的一项我国居民睡眠时间调查显示,18~44、45~59、≥60岁及以上居民每

天的睡眠时间分别为8.2、7.9、7.8h,以上人群中睡眠不足的比例分别为4.1%、9.2%、17.1%,睡眠过多的比例分别为27.1%、20.2%、24.3%,在成年人中睡眠不足和睡眠过多的情况同时存在^[3]。睡眠不足或过多都可能增加成年人脑卒中的患病风险,一项纳入16项前瞻性研究的meta分析显示,以正常睡眠时长7h为参考,超过7h的睡眠时长会增加脑卒中风险,并且>7h的睡眠时长每增加1h,脑卒中风险将会增加13%^[4]。另一项纳入12项队列研究和6项横断面研究的meta分析显示,脑卒中患病率和睡眠时长呈“U”形曲线特征,队列研究的结果表明,睡眠不足与脑卒中风险有较高相关性〔HR(95%CI)为1.13(1.02, 1.25)〕,睡眠过多也会增加脑卒中风险〔HR(95%CI)为1.40(1.16, 1.64)〕,横断面研究的结果证实了短睡眠和长睡眠时长都与较高的脑卒中风险有关联,OR(95%CI)分别为1.71(1.39, 2.02)和2.12(1.51, 2.73)^[5]。

2 睡眠时长与脑卒中危险因素

2.1 睡眠时长与高血压风险 高血压是已经被确立的脑卒中重要的危险因素,很多研究结果显示睡眠时长和高血压

238000 安徽省巢湖市,安徽医科大学附属巢湖医院神经内科

*通信作者:王卫华,副主任医师;E-mail:jackyow@163.com

之间关系密切^[6]。长期睡眠不足可能是罹患高血压的一个重要因素,一项对中国社区45岁以上人群的睡眠时长和高血压关系的调查研究显示,与对照组(7~8 h/晚)相比,睡眠较少组(<6 h/晚)在整个样本中出现高血压的风险增高[HR(95%CI)为1.26(1.04, 1.52)]^[7]。KNUTSON等^[8]对青年人睡眠时长和随访5年的血压变化关系的研究显示,睡眠不足与收缩压和舒张压水平升高有关,同时睡眠时间也预测高血压的发病风险增加。研究虽然表明睡眠时长与成年人的高血压患病风险有关,但对老年人的研究结论却并不一致。GOTTLIEB等^[9]的睡眠心脏健康研究显示,老年人每晚睡眠时长<6 h和≥9 h与高血压患病风险相关。然而也有研究认为老年人的睡眠时长与高血压的关系并不明显^[10]。在性别方面,认为女性较男性在睡眠时长和血压关联更为明显,一项成年人睡眠时长和高血压关系的meta分析报告显示,睡眠时间≤5 h和≥9 h的女性患高血压风险高于男性^[11]。一项对我国中青年睡眠时长与高血压的纵向研究结果显示,睡眠时间短与女性高血压患病风险增加有关,与7~8 h的睡眠时间相比,35~44岁的女性睡眠时间<6 h增加了高血压前期和高血压的患病风险^[12]。睡眠时长和高血压风险相关的潜在病理生理机制可能与交感神经兴奋性增加有关。LUSARDI等^[13]对高血压患者的睡眠研究显示,在夜间睡眠时间不足时,平均24 h的血压和心率都较基础水平增高,尤其是晨间的血压及心率增加会更为明显,睡眠不足的高血压患者尿液中去甲肾上腺素水平增高,以上证据都提示了睡眠不足增加了高血压患者交感神经的兴奋性。对血压正常的健康人群24 h动态血压监测报告显示,短睡眠时间也会导致正常血压水平的增高和心率增快^[14],这都提示睡眠不足导致血压增高的发病机制与交感神经兴奋性增加有关。

2.2 睡眠时长与糖尿病风险 多项研究已经证实,糖尿病与睡眠时长之间关系密切^[15-16]。睡眠时间过长或不足可能会增加糖尿病的患病风险,KUHN等^[17]在1969年提出了睡眠剥夺对新陈代谢的影响,表明完全睡眠剥夺后会导致葡萄糖水平明显升高。有研究显示睡眠时长与糖尿病的患病风险呈“U”形曲线分布,每天7~8 h睡眠时长的糖尿病患病风险最低,睡眠时间过长或过短都会增加糖尿病的发病风险,短(≤5 h)和长(>8 h)睡眠时间是糖尿病发生的独立危险因素^[18],如果睡眠时间不足6 h,糖尿病的患病风险将增加30%^[19]。糖尿病患者的血糖控制不佳也可能与不适当的睡眠时长相关,OHKUMA等^[20]对4 870例年龄≥20岁的日本2型糖尿病患者的调查结果显示,6.5~7.4 h之外的睡眠时长与2型糖尿病患者的糖化血红蛋白水平升高有关。其发生机制可能与睡眠时长不足会引起β细胞反应性升高和糖耐量降低有关,这会导致更高的外周血糖水平,并最终促进胰岛素抵抗的发生^[21]。睡眠不足还可引发一系列负性生理改变,如应激系统启动后体内氢化可的松、肾上腺素等“升糖激素”分泌增加,同时也会影响到其他与调节代谢的激素(如褪黑素、生长激素等)分泌异常^[22]。考虑到睡眠不足与患糖尿病的风险有关,为明确能否通过睡眠恢复降低或消除糖尿病患病风险,BROUSSARD等^[23]对健康受试者连续4 d的睡眠剥夺后,发

现胰岛素敏感性下降了23%,然后对受试者再连续2 d的睡眠补偿,胰岛素的敏感性又恢复到正常水平,虽然这项研究显示胰岛素敏感性可以通过睡眠补偿来恢复,但目前仍不清楚这一结果在慢性睡眠不足时是否仍然成立。

2.3 睡眠时长与血脂异常风险 脂质代谢异常对促进动脉粥样硬化的形成起着重要的作用,是脑卒中发生的重要危险因素。睡眠时长与血脂异常之间似乎存在关联,最近一项对中国台湾中老年人的睡眠时长与血脂的研究显示,睡眠时长与高密度脂蛋白胆固醇(HDL-C)水平呈“U”型曲线关系,每晚睡眠时间较长(>7 h)和睡眠时间较短(<6 h)的受试者,HDL-C水平较低(<40 mg/dl)的流行率高于睡眠时间中等(6~7 h)的受试者,短或长睡眠时间增加了HDL-C水平降低的风险^[24]。美国一项为期10年的纵向研究显示,睡眠时间过长增加了三酰甘油(TG)、低密度脂蛋白胆固醇(LDL-C)、总胆固醇(TC)、TC/HDL-C比例增高的风险,然而短睡眠时长对血脂却无明显影响^[25]。鉴于短睡眠时长对血脂影响的研究结果不一致,这可能需要更多的研究去客观测量睡眠时长和血脂之间的关系,以得出更明确的结论。与性别关联的研究中,KANEITA等^[26]的研究表明,与睡眠6~7 h的成年女性相比,睡眠时间<5 h的女性HDL-C水平降低的相对风险为5.85,睡眠时间≥8 h女性的相对风险为4.27,然而在男性中并没有发现存在关联。来自对中国8 574例成年人的健康与营养调查报告也显示,女性较短和较长的睡眠时间与载脂蛋白B(ApoB)增高风险有关,而男性睡眠时间则与ApoB增高无关^[27]。然而也有观点认为睡眠时间和血脂之间的关联不存在性别差异,最近的一项大型研究结果显示,睡眠时间≤5 h与高TC和高LDL-C水平有关系,但经年龄和性别调整后,其相关性无统计学意义^[28]。多项研究发现睡眠时长不足可引起食欲和对脂肪摄入的渴望增加,这可能与短睡眠时间导致血脂异常的机制有关。GREER等^[29]研究发现,睡眠不足后人类额叶皮层和岛叶皮层内活动减少,而杏仁核的活动增多,这些脑区活动减少和增多可导致食欲和人体对脂肪摄入的渴望感增加。FANG等^[30]对健康受试者经过一夜的睡眠剥夺后,与正常睡眠时长后的对照组比较,睡眠剥夺后的受试者在第2天会出现食欲增加,并且进食结构中会摄入更大比例的脂肪和更低比例的碳水化合物,同时静息态功能磁共振也显示睡眠剥夺后从前扣带回皮层到双侧前脑岛的功能连接度明显增加。

2.4 睡眠时长与心房颤动风险 心房颤动是临床上常见的心律失常,可导致脑卒中发生率成倍增加,是脑卒中独立的危险因素。早在1978年WOLF等^[31]的研究表明,不伴有风湿性心脏病(RHD)的心房颤动增加脑卒中5倍以上的患病风险,伴有RHD的心房颤动则增加了17倍的脑卒中患病风险,而且脑卒中的发生风险随着心房颤动持续时间的增加而增加。一项对中国人群阵发性心房颤动和睡眠时长关系的前瞻性研究,对87 693例年龄在18~98岁没有心房颤动的人群随访7.89年,共发生322例心房颤动,结果表明睡眠时长≥8 h是发生心房颤动潜在的预测标志^[32]。日本一项研究显示<6 h的短睡眠时间增加心房颤动患病风险,在调整了慢性肾病、脑卒中、瓣膜病、冠心病、心力衰竭及心房颤动以外的心律失常等因

素后,女性短睡眠时长与心房颤动的关联性高于男性^[33]。关于心房颤动的电生理机制,传统的观点认为是由心房内持续性折返激动引起,即由于兴奋在心房内不均匀传导导致兴奋波分裂成许多折返性冲动而引发心房颤动,IBRAHIM等^[34]研究显示,在急性睡眠剥夺后的心电p波最大时限和p波离散度明显延长,这也证实睡眠时间缩短可引发心房内不均匀传导,心脏机械电反馈作用的异常增强也是心律失常发生的独立机制,急性睡眠不足与心房肌电延迟增高风险有关^[35]。以上证据提示了短睡眠时间可能通过这些电生理机制而引发心房颤动。

2.5 睡眠时长与肥胖风险 体质量过重或肥胖者会引发代谢综合征,容易发生血管代谢异常导致动脉硬化,从而增加脑卒中风险,肥胖也是被确定的脑卒中独立危险因素。多项研究显示睡眠时长与肥胖之间关系密切,睡眠时长过短会增加肥胖风险。一项为期13年的前瞻性研究显示,年轻成年人睡眠时间和体质指数(BMI)之间呈负相关^[36];MAGEE等^[37]的研究表明,中青年睡眠时间过短增加肥胖风险,而在65岁以上老年人中却没有发现明显关联,这可能由于睡眠时长因年龄增长而缩短的生理差异有关。睡眠时长与肥胖的关系可能与女性更为密切,VAN等^[38]的研究显示,女性的BMI变化与睡眠时间存在相互作用,短睡眠时间与女性BMI增高相关,而在男性则没有发现存在这种关联。而且有研究显示 ≤ 5 h睡眠时长与中年女性的体质量增加关联更为明显,睡眠不足可能是中年期女性导致肥胖的1个危险因素^[39]。分析这种性别差异性可能由于女性生理及心理特点与男性不同,女性的雌激素水平较男性更高,同时女性的性格更容易产生焦虑、抑郁等不良情绪,从而影响睡眠的质量。睡眠不足导致肥胖的机制可能与控制食欲的激素水平失衡有关,当睡眠不足时人体内饥饿素水平增加,而瘦素水平下降,当这种平衡的调节机制被破坏后,会促进食欲和增加饥饿感,从而导致对食物和脂肪物质的摄入量增加,继而导致肥胖^[40];另一方面长期的睡眠不足会导致白天疲劳感增加和体力活动减少,通过降低机体的能量消耗而导致肥胖^[41]。

3 小结

综上所述,睡眠时长与脑卒中及脑卒中的危险因素(高血压、糖尿病、血脂异常、心房颤动、肥胖)之间关系密切,睡眠时长可能通过多种直接或间接的机制增加脑卒中风险,但很多潜在的机制目前仍不明确,尤其是睡眠过多增加脑卒中及脑卒中危险因素风险的机制仍然不清楚。未来的研究应侧重于从神经生理学、细胞学、分子学水平研究其确切的发病机制,这需要较大样本的临床试验进一步证实。同时应提高公众和临床医生对睡眠时长的认识和干预,这可能对脑卒中的预防具有重要意义。

作者贡献:王卫华进行文章的构思与设计,文献/资料收集和整理,撰写论文;崔时贝进行论文的修订;纪晓雯进行英文的修订;张永葆进行文章的质量控制和审校,对文章整体负责,监督管理。

本文无利益冲突。

参考文献

- [1] 赵冬. 我国人群脑卒中发病率、死亡率的流行病学研究[J]. 中华流行病学杂志, 2002, 22(z1): 49-53. DOI: 10.3760/j.issn:0254-6450.2002.z1.017.http://www.wanfangdata.com.cn/details/detail.do?_type=perio&id=zhlxbx2002z1017.
- [2] 马冠生, 崔朝辉, 胡小琪, 等. 中国居民的睡眠时间分析[J]. 中国慢性病预防与控制, 2006, 14(2): 68-71. DOI: 10.3969/j.issn.1004-6194.2006.02.002. MA G S, CUI C H, HU X Q, et al. Analysis on sleeping time among Chinese population[J]. Chinese Journal of Prevention and Control of Chronic Non-Communicable Diseases, 2006, 14(2): 68-71. DOI: 10.3969/j.issn.1004-6194.2006.02.002.
- [3] HE Q, SUN H, WU X, et al. Sleep duration and risk of stroke: a dose-response meta-analysis of prospective cohort studies[J]. Sleep Med, 2017, 32(5): 66-74. DOI: 10.1016/j.sleep.2016.12.012.
- [4] GE B, GUO X. Short and long sleep durations are both associated with increased risk of stroke: a meta-analysis of observational studies[J]. Int J Stroke, 2015, 10(2): 177-184. DOI: 10.1111/ijss.12398.
- [5] MENG L, ZHENG Y, HUI R. The relationship of sleep duration and insomnia to risk of hypertension incidence: a meta-analysis of prospective cohort studies[J]. Hypertension Research, 2013, 36(11): 985-995. DOI: 10.1038/hr.2013.70.
- [6] 田沈, 赵洋, 甘秀红, 等. 辽宁省锦州市农村居民睡眠时间与高血压的相关性[J]. 中国慢性病预防与控制, 2015, 23(7): 495-497, 501. DOI: 10.16386/j.cjpcd.issn.1004-6194.2015.07.005. TIAN S, ZHAO Y, GAN X H, et al. Investigation of the relationship between sleep duration and hypertension in rural residents in Liaoning Province[J]. Chinese Journal of Prevention and Control of Chronic Non-Communicable Diseases, 2015, 23(7): 495-497, 501. DOI: 10.16386/j.cjpcd.issn.1004-6194.2015.07.005.
- [7] GUO J, FEI Y, LI J, et al. Gender- and age-specific associations between sleep duration and prevalent hypertension in middle-aged and elderly Chinese: a cross-sectional study from CHARLS 2011-2012[J]. BMJ Open, 2016, 6(9): e011770. DOI: 10.1136/bmjopen-2016-011770.
- [8] KNUTSON K L, CAUTER E V, RATHOUZ P J, et al. Association between sleep and blood pressure in midlife: the CARDIA sleep study[J]. Arch Intern Med, 2016, 169(11): 1055-1061. DOI: 10.1001/archinternmed.2009.119.
- [9] GOTTLIEB D J, REDLINE S, NIETO F J, et al. Association of usual sleep duration with hypertension: the sleep heart health study[J]. Sleep, 2006, 29(8): 1009-1014. DOI: 10.1093/sleep/29.8.1009.
- [10] MAGEE C A, KRITHARIDES L, ATTIA J, et al. Short and long sleep duration are associated with prevalent cardiovascular disease in Australian adults[J]. J Sleep Res, 2012, 21(4): 441-447. DOI: 10.1111/j.1365-2869.2011.00993.x.
- [11] YAN W, HAO M, YAN-RUI J, et al. Relationship

- between duration of sleep and hypertension in adults: a meta-analysis [J]. *J Clin Sleep Med*, 2015, 11 (9): 1047-1056. DOI: 10.5664/jcsn.5024.
- [12] SUN X, YAO S, HU S, et al. Short sleep duration is associated with increased risk of pre-hypertension and hypertension in Chinese early middle-aged females [J]. *Sleep Breath*, 2016, 20 (4): 1355-1362. DOI: 10.1007/s11325-016-1392-2.
- [13] LUSARDI P, ZOPPI A, PRETI P, et al. Effects of insufficient sleep on blood pressure in hypertensive patients: a 24-h study [J]. *Hypertension*, 1999, 12 (1): 63-68. DOI: 10.1016/S0895-7061(98)00200-3.
- [14] LUSARDI P, MUGELLINI A, PRETI P, et al. Effects of a restricted sleep regimen on ambulatory blood pressure monitoring in normotensive subjects [J]. *AM J Hypertens*, 1996, 9 (5): 503-505. DOI: 10.1016/0895-7061(95)00389-4.
- [15] 查龙肖, 周权, 李风英, 等. 睡眠时间与2型糖尿病发病风险关系前瞻性研究的meta分析[J]. *中国全科医学*, 2016, 19(26): 3196-3203. DOI: 10.3969/j.issn.1007-9572.2016.26.014.
- ZHA L X, ZHOU Q, LI F Y, et al. Relationship between length of sleep and incidence risk of type 2 diabetes: a meta-analysis of prospective studies [J]. *Chinese General Practice*, 2016, 19(26): 3196-3203. DOI: 10.3969/j.issn.1007-9572.2016.26.014.
- [16] MASKARINEC G, JACOBS S, AMSHOFF Y, et al. Sleep duration and incidence of type 2 diabetes: the multiethnic cohort [J]. *Sleep Health*, 2018, 4 (1): 27-32. DOI: 10.1016/j.sleh.2017.08.008.
- [17] KUHN E, BRODAN V, BRODANOVÁ M, et al. Metabolic reflection of sleep deprivation [J]. *Acta Nerv Super (Praha)*, 1969, 11 (3): 165-174.
- [18] SHAN Z, MA H, XIE M, et al. Sleep duration and risk of type 2 diabetes: a meta-analysis of prospective studies [J]. *Diabetes Care*, 2015, 38 (3): 529-537. DOI: 10.2337/dc14-2073.
- [19] HOLLIDAY E G, MAGEE C A, KRITHARIDES L, et al. Short sleep duration is associated with risk of future diabetes but not cardiovascular disease: a prospective study and meta-analysis [J]. *PLoS One*, 2013, 8 (11): e82305. DOI: 10.1371/journal.pone.0082305.
- [20] OHKUMA T, FUJII H, IWASE M, et al. Impact of sleep duration on obesity and the glycemic level in patients with type 2 diabetes: the fukuoka diabetes registry [J]. *Diabetes Care*, 2013, 36 (3): 611-617. DOI: 10.2337/dc12-0904.
- [21] FLINT J, KOTHARE S V, ZIHLIF M, et al. Association between inadequate sleep and insulin resistance in obese children [J]. *J Pediatr*, 2007, 150 (4): 364-369. DOI: 10.1016/j.jpeds.2006.08.063.
- [22] KIM T W, JEONG J H, HONG S C. The impact of sleep and circadian disturbance on hormones and metabolism [J]. *Int J Endocrinol*, 2015, 11 (3): 1-9. DOI: 10.1155/2015/591729.
- [23] BROUSSARD J L, WROBLEWSKI K, KILKUS J M, et al. Two nights of recovery sleep reverses the effects of short-term sleep restriction on diabetes risk [J]. *Diabetes Care*, 2016, 39 (3): e40-41. DOI: 10.2337/dc15-2214.
- [24] LIND P M, CHANG K T, LIN Y A, et al. Association between self-reported sleep duration and serum lipid profile in a middle-aged and elderly population in Taiwan: a community-based, cross-sectional study [J]. *BMJ Open*, 2017, 7 (10): e015964. DOI: 10.1136/bmjopen-2017-015964.
- [25] PETROV M E, KIM Y, LAUDERDALE D, et al. Longitudinal associations between objective sleep and lipids: the CARDIA study [J]. *Sleep*, 2013, 36 (11): 1587-1595. DOI: 10.5665/sleep.3104.
- [26] KANEITA Y, UCHIYAMA M, YOSHIKE N, et al. Associations of usual sleep duration with serum lipid and lipoprotein levels [J]. *Sleep*, 2008, 31 (5): 645-652. DOI: 10.1055/s-2007-1023230.
- [27] ZHAN Y, CHEN R, YU J. Sleep duration and abnormal serum lipids: the China health and nutrition survey [J]. *Sleep Med*, 2014, 15 (7): 833-839. DOI: 10.1016/j.sleep.2014.02.006.
- [28] SHIN H Y, KANG G, KIM S W, et al. Associations between sleep duration and abnormal serum lipid levels: data from the Korean national health and nutrition examination survey (KNHANES) [J]. *Sleep Med*, 2016, 24: 119-123. DOI: 10.1016/j.sleep.2016.05.012.
- [29] GREER S M, GOLDSTEIN A N, WALKER M P. The impact of sleep deprivation on food desire in the human brain [J]. *Nat Commun*, 2013, 4 (4): 2259. DOI: 10.1038/ncomms3259.
- [30] FANG Z, SPAETH A M, MA N, et al. Altered salience network connectivity predicts macronutrient intake after sleep deprivation [J]. *Sci Rep*, 2015, 5 (1): 8210-8215. DOI: 10.1038/srep08215.
- [31] WOLF P A, DAWBER T R, JR T H, et al. Epidemiologic assessment of chronic atrial fibrillation and risk of stroke: the Framingham study [J]. *Neurology*, 1978, 28 (10): 973-977. DOI: 10.1212/WNL.28.10.973.
- [32] SONG Q, LIU X, HU W, et al. Long sleep duration is an independent risk factor for incident atrial fibrillation in a Chinese population: a prospective cohort study [J]. *Sci Rep*, 2017, 7 (1): 3679. DOI: 10.1038/s41598-017-04034-8.
- [33] KOKUBO Y, KOBAYASHI T, WATANBE M, et al. A prospective study of sleep duration and the risk of incident atrial fibrillation in an urban population: the Suita study [J]. *J AM Coll Cardiol*, 2014, 63 (12): a1434. DOI: 10.1016/S0735-1097(14)61434-0.
- [34] IBRAHIM S M D, VEDAT D M D, BURCU O M D, et al. Acute sleep deprivation is associated with increased electrocardiographic p-wave dispersion in healthy young men and women [J]. *PACE*, 2010, 31 (4): 438-442. DOI: 10.1111/j.1540-8159.2008.01013.x.
- [35] ÖZLEMESSEN M D, MUSTAFA A M D, GÖKSEL A M D, et al. Acute sleep deprivation is associated with increased atrial electromechanical delay in healthy young adults [J]. *Pace*, 2011, 34 (12): 1645-1651. DOI: 10.1111/j.1540-8159.2011.03186.x.
- [36] HASLER G, BUYSSE D J, KLAGHOFFER R, et al. The

· 新进展 ·

抑郁症相关疲劳感的研究进展

李苗¹, 王群松^{1*}, 贾竑晓²

【摘要】 疲劳感与抑郁症的关系十分复杂, 其是抑郁症的一种常见症状; 是一种普遍的抑郁症前驱症状, 尤其是抑郁症首次发作时; 也是抑郁症的一种残留症状, 并且比其他抑郁症状更易趋于慢性化, 与患者工作和社会功能缺损高度相关。因此, 关注抑郁症患者的疲劳感症状对临床治疗抑郁症、改善患者的生活质量及降低复发率具有重要的临床意义。本文就抑郁症相关疲劳感的定义、临床表现、不良后果、产生机制、诊治进展进行综述, 以期为广大医生提供参考。

【关键词】 疲劳感; 抑郁症; 体征和症状; 生活质量; 综述

【中图分类号】 R 749.41 **【文献标识码】** A DOI: 10.12114/j.issn.1007-9572.2019.00.321

李苗, 王群松, 贾竑晓. 抑郁症相关疲劳感的研究进展[J]. 中国全科医学, 2019, 22(31): 3901-3904. [www.chinagp.net]

LI M, WANG Q S, JIA H X, et al. Research progress on depression fatigue[J]. Chinese General Practice, 2019, 22(31): 3901-3904.

Research Progress on Depression Fatigue LI Miao¹, WANG Qunsong^{1*}, JIA Hongxiao²

1. Department of Integrated Traditional Chinese and Western Medicine in Psychiatry, Wuxi Mental Health Center Affiliated to Nanjing Medical University, Wuxi 214151, China

2. Chinese and Western Medicine Research Center, Beijing An Ding Hospital, Capital Medical University, Beijing 100088, China

*Corresponding author: WANG Qunsong, Chief physician; E-mail: jingtu900@163.com

【Abstract】 The relationship between fatigue and depression is very complex. As a symptom of depression, fatigue is a common premonitory symptom especially at the first attack of the depression. Fatigue is also a residual symptom of depression which is more prone to become chronic disease than other depressive symptoms and is highly related to patients' work and social function defects. Therefore, paying attention to fatigue of depressive patients has important significance for their clinical treatment, the improvement of their quality of life and the reduction of recurrence rate of depression. This article reviews the definition, clinical manifestation, adverse outcomes, mechanism, diagnosis and treatment of depression fatigue in order to provide a reference for doctors.

【Key words】 Fatigue; Depressive disorder; Signs and symptoms; Quality of life; Review

1.214151 江苏省无锡市, 南京医科大学附属无锡精神卫生中心中西医结合精神科

2.100088 北京市, 首都医科大学附属北京安定医院中西医结合研究所

*通信作者: 王群松, 主任医师; E-mail: jingtu900@163.com

association between short sleep duration and obesity in young adults: a 13-year prospective study [J]. Sleep, 2004, 27(4): 661-666. DOI: 10.1093/sleep/27.4.661.

[37] MAGEE C A, CAPUTI P, IVERSON D C. Is sleep duration associated with obesity in older Australian adults? [J]. J Aging Health, 2010, 22(8): 1235-1255. DOI: 10.1177/0898264310372780.

[38] VAN S T, KOENDERS P G. Effects of emotional eating and short sleep duration on weight gain in female employees [J]. J Occup Environ Med, 2014, 56(6): 659-666. DOI: 10.1097/JOM.0000000000000172.

[39] LYYTIKÄINEN P, RAHKONEN O, LAHELMA E, et al. Association of sleep duration with weight and weight gain: a

prospective follow-up study [J]. J Sleep Res, 2011, 20(2): 298-302. DOI: 10.1111/j.1365-2869.2010.00903.x.

[40] MORSELLI L, LEPROULT R, BALBO M, et al. Role of sleep duration in the regulation of glucose metabolism and appetite [J]. Best Pract Res Clin En, 2010, 24(5): 687-702. DOI: 10.1016/j.beem.2010.07.005.

[41] SCHMID S M, HALLSCHMID M, JAUCH CHARA K, et al. Short-term sleep loss decreases physical activity under free-living conditions but does not increase food intake under time-deprived laboratory conditions in healthy men [J]. AM J Clin Nutr, 2009, 90(6): 1476-1482. DOI: 10.3945/ajcn.2009.27984.

(收稿日期: 2019-06-09; 修回日期: 2019-08-09)

(本文编辑: 殷丽刚)