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音乐疗法对阿尔茨海默病患者的睡眠质量、生活质量、认知功能及激越行为的影响 *

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摘要 目的：探讨音乐疗法对阿尔茨海默病（AD）患者睡眠质量、生活质量、认知功能及激越行为的影响。**方法：**选择 2016 年 8 月至 2017 年 10 月湖南省脑科医院收治的 AD 患者 50 例为研究对象，采用随机数字表法分为观察组和对照组各 25 例，对照组给予常规药物治疗及认知训练，观察组在对照组的基础上给予音乐疗法辅助治疗，于治疗前、治疗 8 周，治疗 16 周采用匹茨堡睡眠质量指数量表（PSQI）、睡眠状况自评量表（SRSS）、生活质量测定量表简表（WHOQOL-BREF）、简易智力状态检查量表（MMSE）、简明精神病评定量表（BPRS）和激越行为量表（CMAI）评价两组治疗效果。**结果：**两组治疗 8 周和治疗 16 周的 PSQI 评分、SRSS 评分、BPRS 评分、CMAI 评分与治疗前比较均明显降低，且治疗 16 周与治疗 8 周比较进一步降低，观察组治疗 8 周和治疗 16 周的上述评分均低于对照组（*P<0.05*）；WHOQOL-BREF 评分、MMSE 评分治疗 8 周和治疗 16 周与治疗前比较明显提高，且治疗 16 周与治疗 8 周比较进一步提高，观察组治疗 8 周和治疗 16 周的上述评分均高于对照组（*P<0.05*）。**结论：**音乐疗法辅助治疗 AD 可以进一步改善患者的睡眠质量、认知功能和激越行为，提高患者的生活质量。

关键词：阿尔茨海默病；音乐疗法；睡眠质量；生活质量；认知功能；激越行为

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Effect of Music Therapy on Sleep Quality, Life Quality, Cognitive Function and Agitation Behavior in Patients with Alzheimer Disease*

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ABSTRACT Objective: To explore the effect of music therapy on sleep quality, life quality, cognitive function and agitation behavior in patients with alzheimer disease(AD). **Methods:** 50 patients with AD were selected in Brain Hospital of Hunan Province as the subjects from August 2016 to October 2017, the patients were divided into observation group and control group accdrding to random number table method, 25 cases each group, the control group were treated with routine medication and cognitive training, the observation group were treated with music therapy assisted treatment on the basis of the control group, the effect between the two groups were judged by Pittsburgh sleep quality index (PSQI), self rating scale of sleep (SRSS), the determination of the quality of life scale (WHOQOL-BREF), Mini Mental State Examination (MMSE), the Brief Psychiatric Rating Scale (BPRS) and agitation scale (CMAI) at before treatment, 8 weeks after treatment and 16 weeks after treatment. **Results:** The PSQI scores, SRSS scores, BPRS scores and CMAI scores between the two groups at 8 weeks after treatment and 16 weeks after treatment were significantly lower than those at before treatment, and which were further decreased at 16 weeks after treatment compared with 8 weeks treatment, the scores in the observation group at 8 weeks after treatment and 16 weeks after treatment were lower than those in the control group (*P<0.05*). The WHOQOL-BREF score and MMSE score at 8 weeks after treatment and 16 weeks after treatment were significantly higher than those at before treatment, and which were further increased at 16 weeks after treatment compared with 8 weeks treatment, the scores in the observation group at 8 weeks after treatment and 16 weeks after treatment were higher than those in the control group (*P<0.05*). **Conclusion:** The music therapy in the treatment of Alzheimer disease can further improve the sleep quality, cognitive function and agitation behavior in patients, and can improve the life quality.

Key words: Alzheimer disease; Music therapy; Sleep quality; Life quality; Cognitive function; Agitation behavior

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前言

阿尔茨海默病(Alzheimer disease,AD)是一种进行性发展的神经系统退行性疾病,以全面痴呆表现(如记忆障碍、失语、执行功能障碍、人格及行为改变等)为基本特征,70 岁以上的老年人为多发群体,随着我国人口老龄化的趋势加块,AD 的发病率日益增高[1-3]。若 AD 患者未得到积极有效的治疗,其病情的发展可能引起大脑及全身机能逐渐丧失导致各种严重并发症甚至死亡[4]。临床上主要采用药物(包括抗焦虑、抗抑郁、抗精神、益智及改善认知功能药等)治疗 AD,但疗效不甚理想[5-7]。音乐疗法是以达到消除心理障碍、恢复或增进身心健康为目的的治疗方法。已有研究[8]证实,音乐疗法用于辅助治疗情绪障碍、肿瘤、脑卒中早期患者,效果显著。虽有学者对 AD 患者采用音乐疗法辅助治疗进行研究,但较为系统的、分时间点的分析治疗效果的报道较少 [9,10]。本研究分析音乐疗法辅助治疗对 AD 患者睡眠质量、生活质量、认知功能和激越行为的影响,旨在探明音乐疗法在 AD 治疗中的作用,以期为提高 AD 的临床治疗水平提供参考。

1 资料和方法

1.1 一般资料

选择 2016 年 8 月至 2017 年 10 月湖南省脑科医院收治的 AD 患者 50 例为研究对象。纳入标准:(1)符合 AD 的临床诊断标准[11];(2)AD 病理行为评分表(Rating scale of the behavioral pathology in Alzheimer's disease,BEHAVE-AD)评分≥ 8 分;(3)缺血指数量表(Hachinski Inchemic Score,HIS)评分≤ 4 分;(4)能完成本研究中的所有调查项目。排除标准:(1)血管性痴呆或其他原因引起的痴呆者;(2)并发帕金森病、癫痫、脑炎、脑外伤后认知功能障碍者;(3)有严重神经功能缺损及严重心、肝、肾疾病者;(4)病例脱落者。采用随机数字表法分为观察组和对照组,每组 25 例。观察组:男 9 例,女 16 例;年龄 58~89 岁,平均(73.89± 7.52)岁;病程 5~27 个月,平均(13.84± 6.43)个月;教育程度:大学及以上 4 例,中学 13 例,小学及以下 8 例。对照组:男 11 例,女 14 例;年龄 59~86 岁,平均(72.37± 7.73)岁;病程 5~24 个月,平均(13.55± 6.28)个月;教育程度:大学及以上 5 例,中学 14 例,小学及以下 6 例。两组患者的性别、年龄、教育程度及病程等一般资料比较,差异无统计学意义(*P>0.05*),可进行组间比较。患者及家属均签署知情同意书,本研究经我院伦理委员会批准。

1.2 方法

对照组给予药物治疗联合一般认知训练,药物:盐酸多奈哌齐分散片(济宇),盐酸多奈哌齐分散片(山东罗欣药业集团股份有限公司,国药准字:H20080381,规格 5 mg× 12 片 / 盒)5 mg/ 次,1 次 /d,晚间口服;常规认知训练:针对患者不同的认知障碍给予记忆训练、注意力训练、定向力训练、执行功能训练,每日训练 2 次,每次 40 分钟。观察组在对照组的基础上辅以音乐治疗,包括欣赏式音乐治疗和参与式音乐治疗相互结合的方法。具体方案概述为:(1)音乐聆听:专人对患者的病情、教育程度、生活经历、性格爱好等进行评估,选择与患者生活经历相关的音乐(如经典民歌、儿歌、革命歌曲、流行音乐等),音量控制在 30dB 左右,聆听音乐时患者平卧或静坐,患者发生激越、冲动时停播,入睡后停播。(2)音乐回忆:治疗师提示患者根据音乐追忆往事,引导患者回忆首次听到这些音乐是什么时候,当时发生了什么事情,心情怎样等。(3)音乐演唱:组织患者参与音乐演唱活动,治疗师教患者唱这些曲目,然后患者上台表演,某位患者表演时其他患者跟唱。音乐治疗每日 2 次,每次 40 分钟。

1.3 观察指标

于治疗前、治疗 8 周、治疗 16 周评价两组患者疗效,具体包括:(1)睡眠质量:采用匹茨堡睡眠质量指数量表 [12](Pittsburgh sleep quality index,PSQI)和睡眠状况自评量表[13](Self-Rating Scale of Sleep,SRSS)进行评估。PSQI 包括 19 个评条构成 7 个项目,每个项目 0~3 分,总分 0~21 分,得分越高说明睡眠质量越差。SRSS 包括 10 个条目,每个条目 1~5 分,总分 10~50 分,得分越高睡眠质量越差。(2)生活质量:采用 WHO 生活质量测定量表简表 [14](WHO Quality of Life-BREF,WHOQOL-BREF)进行评估,量表共 26 个条目,分为生理、心理、社会关系、环境 4 个维度,每个条目 1~5 分,总分 26~130 分,得分越高说明生活质量越理想。(3)认知功能:采用简易智力状态检查量表[15](Mini-mental State Examinatlon,MMSE)和简明精神病评定量表[16](Brief Psychiatric Rating Scale,BPRS)进行评估。MMSE 包括 18 个条目共 30 个评条,答对一个评条记 1 分,错或不答 0 分,总分 0~30 分,MMSE 总分≥ 27 分为正常,≤ 26 分表示有认知功能障碍。BPRS 包括 18 个条目,每个条目根据严重程度评 0~6 分,总分 0~108 分,得分越高认知功能越差。(4)激越行为:采用激越行为量表 [17](Cohen-Mansfield Agitatation Igitation Inventory,CMAI)进行评估,量表共 36 项,包括躯体攻击行为(13 项)、躯体性非攻击行为(14 项)和言语激越行为(9 项)3 个领域,每个项按频率记分 0~6 分,总分 0~216 分,得分越高说明激越行为程度越重。所有量表评分均由心理评定师在不知道患者所处的组别时进行评分。

1.4 统计学方法

本研究中所有数据均采用 SPSS19.0 进行统计学分析,平均年龄、平均病程及各量表评分等计量资料用均数± 标准差($\bar{x}\pm s$)描述,实施 检验,性别、教育程度等计数资料用%表示,实施 x^2 检验,以 *P<0.05* 为差异有统计学意义。

2 结果

2.1 两组睡眠质量比较

治疗前,两组 PSQI 评分、SRSS 评分比较差异无统计学意义(*P>0.05*);治疗 8 周、治疗 16 周,两组 PSQI 评分、SRSS 评分逐渐降低,且观察组低于对照组(*P<0.05*)。见表 1。

2.2 两组生活质量比较

治疗前,两组 WHOQOL-BREF 总分比较差异无统计学意义(*P>0.05*);治疗 8 周、治疗 16 周,两组 WHOQOL-BREF 总分逐渐升高,且观察组高于对照组(*P<0.05*)。见表 2。

2.3 两组认知功能比较

治疗前,两组 MMSE 评分、BPRS 评分比较差异无统计学意义(*P>0.05*);治疗 8 周、治疗 16 周,两组 MMSE 评分逐渐升高,且观察组高于对照组,BPRS 评分逐渐降低,且观察组低于

对照组（*P<0.05*）。见表 3。

表 1 治疗前后两组睡眠质量比较（$\bar{x}\pm s$，分）

Table 1 Comparison of sleep quality between the two groups before and after treatment ($\bar{x}\pm s$, scores)

Groups	n	PSQI			SRSS		
		Before treatment	8 weeks of treatment	16 weeks of treatment	Before treatment	8 weeks of treatment	16 weeks of treatment
Observation group	25	12.57± 2.13	9.28± 1.74*	7.53± 1.27*#	27.48± 3.54	21.15± 2.68*	16.29± 1.82*#
Control group	25	12.45± 2.21	10.93± 2.06*	8.51± 1.92*#	27.23± 3.47	24.79± 3.12*	20.38± 2.57*#
t	-	0.138	2.084	3.195	0.224	2.209	3.671
P	-	0.827	0.023	0.002	0.815	0.022	0.000

Note: Compared with before treatment,**P<0.05*; Compared with 8 weeks of treatment, #*P<0.05*.

表 2 治疗前后两组 WHOQOL-BREF 评分比较（$\bar{x}\pm s$，分）

Table 2 Comparison of WHOQOL-BREF scores between the two groups before and after treatment ($\bar{x}\pm s$, scores)

Groups	n	Before treatment	8 weeks of treatment	16 weeks of treatment
Observation group	25	50.73± 4.73	60.19± 4.96*	67.80± 4.26*#
Control group	25	49.89± 4.64	54.29± 5.13*	58.81± 4.62*#
t	-	0.473	4.586	5.273
P	-	0.716	0.000	0.00

Note: Compared with before treatment,**P<0.05*; Compared with 8 weeks of treatment, #*P<0.05*.

表 3 治疗前后两组认知功能比较（$\bar{x}\pm s$，分）

Table 3 Comparison of cognitive functions between the two groups before and after treatment ($\bar{x}\pm s$, scores)

Groups	n	MMSE			BPRS		
		Before treatment	8 weeks of treatment	16 weeks of treatment	Before treatment	8 weeks of treatment	16 weeks of treatment
Observation group	25	17.82± 2.24	22.36± 2.13*	26.38± 2.34*#	55.76± 6.24	38.62± 4.31*	31.27± 3.05*#
Control group	25	17.69± 2.21	19.57± 2.19*	21.59± 3.07*#	54.83± 6.09	45.97± 5.06*	38.34± 3.73*#
t	-	0.194	2.084	4.273	0.842	3.499	3.622
P	-	0.785	0.023	0.000	0.274	0.000	0.000

Note: Compared with before treatment,**P<0.05*; Compared with 8 weeks of treatment, #*P<0.05*.

2.4 两组激越行为比较

治疗前，两组 CMAI 评分比较差异无统计学意义（*P>0.05*）；治疗 8 周、16 周，两组 CMAI 评分逐渐降低，且观察组低于对照组（*P<0.05*）。见表 4。

表 4 治疗前后两组 CMAI 评分比较（$\bar{x}\pm s$，分）

Table 4 Comparison of CMAI scores between the two groups before and after treatment ($\bar{x}\pm s$, scores)

Groups	n	Before treatment	8 weeks of treatment	16 weeks of treatment
Observation group	25	34.75± 7.38	21.43± 4.25*	15.87± 2.74*#
Control group	25	35.26± 7.46	28.94± 5.86*	24.39± 4.67*#
t	-	0.337	3.524	5.044
P	-	0.742	0.000	0.000

Note: Compared with before treatment,**P<0.05*; Compared with 8 weeks of treatment,#*P<0.05*.

3 讨论

AD 是一种获得性、持续性智能障碍综合征，患者通常伴有认知能力、记忆能力减退及行为、情绪障碍等情况，具有发病率高、致残率高的特点，严重危害患者的健康及生活质量，并且给给患者家庭及社会带来巨大的经济负担[18,19]。然而由于 AD 的

具体病因及发病机制尚不十分明确,药物治疗主要以阻止或缓解发病及进展、改善患者的认知功能及记忆力为目的,但其临床疗效较差,如何提高 AD 的临床治疗效果已经成为困扰广大医学研究人员及临床医师的一大难题[20]。音乐疗法作为一种新兴的边缘学科,以心理治疗理论和方法为基础,通过各种专门设计的音乐行为及体验,发挥出音乐特有的生理、心理效应,达到消除心理障碍、促进康复的治疗目的[21]。音乐疗法在改善患者情绪、缓解心率及呼吸频率的效果已被研究证实,在手术室、门诊输液等领域应用较广,亦有学者研究证实音乐疗法可明显改善 AD 患者的认知功能,提高生活质量[22,23]。然而,AD 患者的睡眠质量问题是一个较为重要的问题,若患者经常出现睡眠障碍,势必增加住院治疗时间,增加了治疗成本[24,25]。激越行为是 AD 患者经常出现的最顽固性行为,是照护患者人员最头痛的问题之一,其激越行为的严重程度可以衡量患者病情改善情况[26]。而目前关于音乐疗法对于 AD 患者睡眠质量和激越行为的影响的研究却相对较少。

本研究显示,治疗 8 周和治疗 16 周,两组 PSQI 评分、SRSS 评分、BPRS 评分、CMAI 评分较治疗前显著降低,两组 WHOQOL-BREF 总分、MMSE 评分较治疗前显著提高,且观察组改善效果更明显。提示盐酸多奈哌齐片配合常规认知训练可以改善 AD 患者的睡眠质量、认知功能、生活质量及激越行为,但辅以音乐疗法后的改善效果更佳,原因可能是:第一,聆听音乐可刺激脑干网状结构改善神经系统活动水平,一定程度上降低患者的肌电水平使心肌处于相对放松的状态,而睡前播放催眠曲可以缓解 AD 患者的紧张状态,使患者快速进入睡眠状态,提高睡眠质量。第二,音乐疗法为 AD 患者营造了一个良好的环境,减少了患者的应激反应,达到自我放松的效果,消除或减轻了不良心理因素对患者的负面作用,提高了生活质量。第三,音乐治疗可以激发 AD 患者的注意力,激起患者对过往经历的回忆,促进患者长时记忆的恢复;同时,通过音乐表演使 AD 患者得行为得到很大轻度的强化,利于患者定向能力的恢复,促进言语功能恢复。第四,音乐治疗可显著改善 AD 患者的精神行为症状,从而有效改善其激越行为[27,28]。有研究[29,30]表明,音乐疗法可显著改善痴呆患者的激越、抑郁、焦虑、淡漠及激惹等精神行为症状,并且对精神分裂症患者给予音乐治疗联合行为疗法的效果理想,可显著改善患者恢复期的认知功能和精神症状,且对患者的康复和回归社会具有较好的促进作用,与本文研究结果相符。

综上所述,音乐疗法可显著改善 AD 患者的睡眠质量和认知功能,提高患者的生活质量,缓解其激越行为,是一种方便可行的有效方法。

参 考 文 献(References)

[1] Kicherova OA, Reikhert LI. Alzheimer's disease [J]. Zh Nevrol Psikhiatr Im S S Korsakova, 2018, 118(1): 77-81

[2] Williams EA, McGuone D, Frosch MP, et al. Absence of Alzheimer Disease Neuropathologic Changes in Eyes of Subjects With Alzheimer Disease [J]. J Neuropathol Exp Neurol, 2017, 76 (5): 376-383

[3] 程喆歆,梁庆成,吴云,等.阿尔茨海默病的发病机制及药物治疗的研究进展[J].现代生物医学进展, 2017, 17(10): 1981-1985
Cheng Zhe-xin, Liang Qing-cheng, Wu Yun, et al. Research Progress in the Pathogenesis and Medication of Alzheimer's Disease [J]. Progress in Modern Biomedicine, 2017, 17(10): 1981-1985

[4] Connors MH, Ames D, Woodward M, et al. Psychosis and Clinical Outcomes in Alzheimer Disease: A Longitudinal Study [J]. Am J Geriatr Psychiatry, 2018, 26(3): 304-313

[5] Hessmann P, Dodel R, Baum E, et al. Antidepressant medication in a German cohort of patients with Alzheimer's disease [J]. Int J Clin Pharmacol Ther, 2018, 56(3): 101-112

[6] Yang YH, Wu MN, Chou PS, et al. Longitudinal Neuropsychological Outcome in Taiwanese Alzheimer's Disease Patients Treated with Medication[J]. Curr Alzheimer Res, 2018, 15(5): 474-481

[7] Burke SL, Maramaldi P, Cadet T, et al. Decreasing hazards of Alzheimer's disease with the use of antidepressants: mitigating the risk of depression and apolipoprotein E [J]. Int J Geriatr Psychiatry, 2018, 33(1): 200-211

[8] Gómez Gallego M, Gómez García J. Music therapy and Alzheimer's disease: Cognitive, psychological, and behavioural effects [J]. Neurologia, 2017, 32(5): 300-308

[9] Rubbi I, Magnani D, Naldoni G, et al. Efficacy of video-music therapy on quality of life improvement in a group of patients with Alzheimer's disease: a pre-post study[J]. Acta Biomed, 2016, 87(4 - S): 30-37

[10] de la Rubia Ortí JE, García-Pardo MP, Iranzo CC, et al. Does Music Therapy Improve Anxiety and Depression in Alzheimer's Patients?[J]. J Altern Complement Med, 2018, 24(1): 33-36

[11] 段小艺,高俊刚,刘翔,等.阿尔茨海默病患者脑葡萄糖代谢变化PET/CT 研究[J].实用放射学杂志, 2017, 33(10): 1499-1503
Duan Xiao-yi, Gao Jun-gang, Liu Xiang, et al. Evaluation changes of regional cerebral glucose metabolism in patients with Alzheimer's disease[J]. Journal of Practical Radiology, 2017, 33(10): 1499-1503

[12] Takács J, Bódizs R, Ujma PP, et al. Reliability and validity of the Hungarian version of the Pittsburgh Sleep Quality Index (PSQI-HUN): comparing psychiatric patients with control subjects[J]. Sleep Breath ,2016, 20(3): 1045-1051

[13] 杨隽,洪新宇,肖萍,等.运用睡眠状况自评量表评价保健食品改善睡眠功能的研究[J].环境与职业医学, 2012, 29(2): 69-71
Yang Jun, Hong Xin-yu, Xiao Ping, et al. Application of SRSS in the Test on Improving Sleep Function Through Taking One Health Food [J]. Journal of Environmental & Occupational Medicine, 2012, 29(2): 69-71

[14] Evenhamre K, Ekbäck MP, Lindberg M. Correlations Between Disease-specific DLQI and Generic WHOQOL-BREF Quality of Life Instruments in a Clinical Population with Mixed Dermatological Diagnoses: A Pilot Study [J]. Acta Derm Venereol, 2017, 97 (2): 270-272

[15] Kennedy RE, Cutter GR, Wang G, et al. Using baseline cognitive severity for enriching Alzheimer's disease clinical trials: How does Mini-Mental State Examination predict rate of change? [J]. Alzheimers Dement (N Y), 2015, 1(1): 46-52

[16] Park SC, Jang EY, Kim D, et al. Dimensional approach to symptom factors of major depressive disorder in Koreans, using the Brief Psychiatric Rating Scale:the Clinical Research Center for Depression of South Korea study[J]. Kaohsiung J Med Sci, 2015, 31(1): 47-54

[17] Altunöz U, Özel Kızıl ET, Kırıcı S, et al. Dimensions of Agitation Based on the Cohen-Mansfield Agitation Inventory in Patients with Dementia[J]. Turk Psikiyatri Derg, 2015, 26(2): 116-122

[18] Dawood S. Caregiver Burden, Quality of Life and Vulnerability Towards Psychopathology in Caregivers of Patients with Dementia/ Alzheimer's Disease [J]. J Coll Physicians Surg Pak, 2016, 26(11): 892-895

[19] Marešová P, Zahálková V. The economic burden of the care and treatment for people with Alzheimer's disease: the outlook for the Czech Republic[J]. Neurol Sci, 2016, 37(12): 1917-1922

[20] Törmälehto S, Martikainen J, Bell JS, et al. Use of psychotropic medications in relation to neuropsychiatric symptoms, cognition and functional performance in Alzheimer's disease over a three-year period: Kuopio ALSOVA study [J]. Int Psychogeriatr, 2017, 29(10): 1723-1733

[21] Pongan E,Tillmann B, Leveque Y, et al. Can Musical or Painting Interventions Improve Chronic Pain, Mood, Quality of Life, and Cognition in Patients with Mild Alzheimer's Disease? Evidence from a Randomized Controlled Trial [J]. J Alzheimers Dis, 2017, 60(2): 663-677

[22] Palisson J, Roussel-Baclet C, Maillet D, et al. Music enhances verbal episodic memory in Alzheimer's disease[J]. J Clin Exp Neuropsychol, 2015, 37(5): 503-517

[23] Ray KD, Mittelman MS. Music therapy: A nonpharmacological approach to the care of agitation and depressive symptoms for nursing home residents with dementia [J]. Dementia (London), 2017, 16(6): 689-710

[24] 何迎雪,丛琳,杜怡峰,等.阿尔茨海默病患者睡眠障碍的临床特点及相关因素[J].山东大学耳鼻喉眼学报, 2015, 29(2): 1-8
He Ying-xue, Cong Lin, Du Yi-feng, et al. Clinical investigation of sleep disorders and related factors in Alzheimer's disease [J]. Journal of Otolaryngology and Ophthalmology of Shandong University, 2015, 29(2): 1-8

[25] Liu S, Li C, Shi Z, et al. Caregiver burden and prevalence of depression, anxiety and sleep disturbances in Alzheimer's disease caregivers in China[J]. J Clin Nurs, 2017, 26(9-10): 1291-1300

[26] Porsteinsson AP, Antonsdottir IM. An update on the advancements in the treatment of agitation in Alzheimer's disease [J]. Expert Opin Pharmacother, 2017, 18(6):611-620

[27] Howard RJ. Disentangling the Treatment of Agitation in Alzheimer's Disease[J]. Am J Psychiatry, 2016, 173(5): 441-443

[28] Liu CS, Ruthirakuhan M, Chau SA, et al. Pharmacological Management of Agitation and Aggression in Alzheimer's Disease: A Review of Current and Novel Treatments [J]. Curr Alzheimer Res, 2016, 13(10): 1134-1144

[29] 马丽,张守宇,武海燕,等.音乐疗法联合药物对痴呆患者精神行为症状的疗效观察 [J]. 中华老年多器官疾病杂志, 2017, 16(7): 508-511
Ma Li, Zhang Shou-zi, Wu Hai-yan, et al. Clinical efficacy of music therapy combined with drug on psychological symptoms in dementia patients [J]. Chinese Journal of Multiple Organ Diseases in the Elderly, 2017, 16(7): 508-511

[30] 徐良雄,高卉,刘祖松,等.音乐治疗联合行为疗法对恢复期精神分裂症患者康复效果的影响[J].中国康复, 2016, 31(3): 232-234
Xu Liang-xiong, Gao Hui, Liu Zu-song, et al. Effect of music therapy combined with behavioral therapy on rehabilitation of schizophrenia patients in recovery period [J]. Chinese Journal of Rehabilitation, 2016, 31(3): 232-234

(上接第 3895 页)

[23] Liu J, Liu H, Zhao H, et al. Relationship between cardio-ankle vascular index and homocysteine in hypertension subjects with hyperhomocysteinemia[J]. Clin Exp Hypertens, 2016, 38(7): 652-657

[24] Zhong F, Zhuang L, Wang Y, et al. Homocysteine levels and risk of essential hypertension: A meta-analysis of published epidemiological studies[J]. Clin Exp Hypertens, 2017, 39(2): 160-167

[25] Xu H, Zheng H, Huang J, et al. T-cell subsets are associated with serum homocysteine concentration in patients with essential hypertension[J]. Clin Exp Hypertens, 2017, 39(4): 377-381

[26] Čabarkapa V, Ilinčić B, Đerić M, et al. Cystatin C, vascular biomarkers and measured glomerular filtration rate in patients with unresponsive hypertensive phenotype: a pilot study [J]. Ren Fail, 2017, 39(1): 203-210

[27] Xu Z, Leng C, Yang B, et al. Serum cystatin C is associated with large cerebral artery stenosis in acute ischemic stroke [J]. Oncotarget, 2017, 8(40): 67181-67188

[28] Han J, Gao Y, Guo Q, et al. Cross-sectional study on the relationship between the level of serum cystatin C and blood pressure reverse dipping in hypertensive patients [J]. BMJ Open, 2016, 6 (9): 11166-11167

[29] Garcia-Carretero R, Vigil-Medina L, Barquero-Perez O, et al. Cystatin C as a predictor of cardiovascular outcomes in a hypertensive population[J]. J Hum Hypertens, 2017, 31(12): 801-807

[30] Chang Y, Li Y, Guo X, et al. The Prevalence of Hypertension Accompanied by High Homocysteine and its Risk Factors in a Rural Population: A Cross-Sectional Study from Northeast China [J]. Int J Environ Res Public Health, 2017, 14(4): 376-377