

帕罗西汀联合奥氮平对我国抑郁症合并睡眠障碍患者临床疗效的Meta分析



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【摘要】目的 系统评价帕罗西汀联合奥氮平与单用帕罗西汀对我国抑郁症合并睡眠障碍患者临床疗效的影响。**方法** 计算机检索 PubMed、Embase、Cochrane Library、CINAHL、SinoMed、CNKI、VIP、WanFang Data 数据库、SUMsearch 和 Google 搜索引擎, 搜集关于帕罗西汀联合奥氮平对比单用帕罗西汀治疗我国抑郁症合并睡眠障碍患者的随机对照试验(RCT), 检索时限均从建库至2023年4月3日。由2名研究者独立筛选文献、提取资料并评价纳入研究的偏倚风险后, 采用 RevMan 5.3 软件进行 Meta 分析。**结果** 共纳入 70 个 RCT, 包含 5 683 例患者。Meta 分析结果显示, ①试验组患者的总有效率显著高于对照组 [OR=5.98, 95%CI (4.51, 7.94), $P < 0.001$]; ②试验组患者的匹兹堡睡眠质量指数评分在治疗后 1 个月 [MD=-2.81, 95%CI (-3.24, -2.38), $P < 0.001$]、2 个月 [MD=-2.41, 95%CI (-3.13, -1.70), $P < 0.001$]、3 个月 [MD=-2.80, 95%CI (-3.18, -2.42), $P < 0.001$] 和 6 个月 [MD=-1.65, 95%CI (-1.83, -1.48), $P < 0.001$] 均显著低于对照组; ③试验组患者的汉密尔顿抑郁量表评分在治疗后 1 个月 [MD=-5.79, 95%CI (-6.63, -4.95), $P < 0.001$]、2 个月 [MD=-4.33, 95%CI (-5.45, -3.21), $P < 0.001$]、3 个月 [MD=-3.76, 95%CI (-4.17, -3.34), $P < 0.001$] 和 6 个月 [MD=-3.38, 95%CI (-3.60, -3.15), $P < 0.001$] 均显著低于对照组; ④试验组患者的汉密尔顿焦虑量表评分显著低于对照组 [MD=-3.47, 95%CI (-3.78, -3.16), $P < 0.001$]。**结论** 当前证据显示, 与单用帕罗西汀相比, 帕罗西汀联合奥氮平能提高我国抑郁症合并睡眠障碍患者临床治疗的总有效率, 改善治疗后 1 个月、2 个月、3 个月、6 个月的睡眠质量和抑郁症状, 且降低焦虑情绪。受纳入研究数量和质量限制, 上述结论尚需更多高质量研究予以验证。

【关键词】 帕罗西汀; 奥氮平; 抑郁症; 睡眠障碍; Meta 分析; 随机对照试验

Clinical efficacy of paroxetine combined with olanzapine among Chinese patients with depression complicated with sleep disorders: a Meta-analysis

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【Abstract】Objective To systematically review the clinical efficacy of paroxetine plus olanzapine versus paroxetine alone among depression complicated with sleep disorder patients in China. **Methods** PubMed, Embase, Cochrane Library, CINAHL, SinoMed, CNKI, VIP, WanFang Data databases, SUMsearch and Google search engine were electronically searched to collect randomized controlled trials (RCTs) of paroxetine plus olanzapine versus paroxetine in the treatment of depression complicated with sleep disorder Chinese patients from inception to April 3, 2023. Two researchers independently screened the literature, extracted data and evaluated the risk of bias of the included studies, and the Meta-analysis was then performed by using RevMan 5.3 software. **Results** A total of 70 RCTs involving 5 683 patients were included. The results of Meta-analysis showed that: (1) the total effective rate in experimental group was significantly higher than that of the control group (OR=5.98, 95%CI 4.51 to 7.94, $P<0.001$); (2) Pittsburgh sleep quality index scores after treatment in the first month (MD=-2.81, 95%CI -3.24 to -2.38, $P<0.001$), in 2 months (MD=-2.41, 95%CI -3.13 to -1.70, $P<0.001$), in 3 months (MD=-2.80, 95%CI -3.18 to -2.42, $P<0.001$) and in 6 months (MD=-1.65, 95%CI -1.83 to -1.48, $P<0.001$) in experimental group were significantly lower than the control group; (3) Hamilton depression scale scores after treatment in the first month (MD=-5.79, 95%CI -6.63 to -4.95, $P<0.001$), in 2 months (MD=-4.33, 95%CI -5.45 to -3.21, $P<0.001$), in 3 months (MD=-3.76, 95%CI -4.17 to -3.34, $P<0.001$) and in 6 months (MD=-3.38, 95%CI -3.60 to -3.15, $P<0.001$) in experimental group were significantly lower than the control group; (4) Hamilton anxiety scale scores in experimental group were significantly lower than the control group (MD=-3.47, 95%CI -3.78 to -3.16, $P<0.001$). **Conclusion** Current evidence shows that, compared with the paroxetine alone in the treatment of depression complicated with sleep disorder patients in China, paroxetine plus olanzapine can effectively increase patients' total effective rate of clinical treatment, improve the sleep quality and depression symptoms in 1 month, 2 months, 3 months and 6 months after treatment, and also reduce patients' anxiety. Due to limited quality and quantity of the included studies, more high-quality studies are required to verify above conclusions.

【Keywords】 Paroxetine; Olanzapine; Depression; Sleep disorder; Meta-analysis; Randomized controlled trial

抑郁症作为最常见且疾病负担居首的情绪障碍, 主要表现情绪低落、思维迟钝、意志消退、认知障碍等症状, 可由遗传、人格、家庭及社会心理因素等多种原因引发, 随着社会的发展, 其发病率激增^[1-3]。目前我国患抑郁症人数 9 500 万, 每年约 28 万人自杀, 其中 40% 患抑郁症; 同时, 成人抑郁障碍终生患病率为 6.8%, 其中抑郁症为 3.4%^[1]。睡眠障碍是抑郁症患者常见且相对严重的临床病症, 包括过早觉醒、入睡困难及睡眠质量较差等。抑郁与睡眠障碍间存在双向影响关系, 抑郁症伴睡眠障碍若不及时治疗, 会导致抑郁症的发病率和复发率更高, 严重威胁患者的健康和生命安全^[4-7]。对于抑郁症伴发睡眠障碍的治疗,

临床以药物控制为主。帕罗西汀为一线抗抑郁药, 因其对 5-羟色胺 (5-HT) 受体的兴奋作用, 单用易致早醒, 加重患者早期睡眠障碍。奥氮平是非典型抗精神病药, 小剂量可抗抑郁, 联合用药能增效患者的睡眠结构, 改善睡眠质量。但两者联合用药与单用帕罗西汀在临床疗效方面尚存在争议和分歧, 如庞春霞^[8]、陈正平等^[9]报道联合用药总有效率显著高于单用帕罗西汀, 而罗祝平等^[10]研究显示两者联合用药与单用帕罗西汀的疗效差异并无统计学意义。目前, 国外尚无帕罗西汀联合奥氮平治疗抑郁症合并睡眠障碍患者的研究报道, 而国内尚未发现有关两者联用治疗该疾病的系统评价 /Meta 分析。鉴于此, 本研究采

用 Meta 分析的方法对帕罗西汀与奥氮平联用治疗我国抑郁症合并睡眠障碍患者的临床疗效进行系统评价,以期为国内临床决策者和患者提供更为有效的临床决策参考。

1 资料与方法

1.1 纳入与排除标准

1.1.1 研究类型

随机对照试验 (randomized controlled trial, RCT)。

1.1.2 研究对象

我国抑郁症伴睡眠障碍患者,且符合以下内容:①《国际疾病分类》(ICD-11)^[11]或《CCMD-3 中国精神障碍分类与诊断标准(第三版)》^[12]或各抑郁症指南中抑郁症诊断标准;②合并睡眠障碍,包括失眠、不寐、睡眠异常、睡眠剥夺、睡眠紊乱、睡眠不足等睡眠问题;③年龄 ≥ 18 岁;④病情稳定,思维清晰,能充分沟通交流。

1.1.3 干预措施

试验组采用帕罗西汀联合奥氮平药物治疗;对照组单用帕罗西汀药物治疗。

1.1.4 结局指标

主要结局指标包括:①总有效率:利用匹兹堡睡眠质量指数(PSQI)量表评分和汉密尔顿抑郁量表(HAMD)评分进行疗效评价(无效:PSQI、HAMD 评分减分率 $< 25\%$;有效:评分减分率为 $25\% \sim 49\%$;显效:评分减分率 $\geq 50\%$),总有效率=(显效例数+有效例数)/总例数 $\times 100\%$ 。②PSQI 评分:治疗后第1个月、2个月、3个月、6个月的PSQI 评分;③HAMD 评分:治疗后第1个月、2个月、3个月、6个月的HAMD 评分。次要结局指标为汉密尔顿焦虑量表(HAMA)评分。

1.1.5 排除标准

①重复发表的研究,仅选取研究质量最高者;②数据不完整或无法提取原始数据的研究;③会议摘要;④结局指标不明确者;⑤非中文、英文文献。

1.2 文献检索策略

计算机检索 PubMed、Embase、Cochrane Library、CINAHL、SinoMed、CNKI、VIP、WanFang Data 数据库、SUMsearch 和 Google 搜索引擎,搜集帕罗西汀联合奥氮平对比单用帕罗西

汀治疗我国抑郁症合并睡眠障碍患者的 RCT,检索时限均从建库至 2023 年 4 月 3 日。英文检索词包括:depression、depressions、depressive symptoms、depressive symptom、emotional depression、depressive disorder、depressive disorders、melancholia、melancholias、depressive neurosis、depressive neuroses、depressive syndrome、depressive syndromes、dysthymic disorder、dysthymic disorders、dysthymia、sleep disorder、sleep disorders、dyssomnias、dyssomnia、paroxetine、paroxil、seroxat、paxil、aropax、olanzapine、whfzl、lepotex、leponex、zyprexa、oliza、lanzac、zolafren;中文检索词包括:抑郁症、忧郁症、抑郁障碍、恶劣心境障碍、抑郁症状、睡眠障碍、失眠、不寐、睡眠(睡眠异常、睡眠剥夺、睡眠紊乱、睡眠不足、睡眠质量、睡眠问题)、帕罗西汀、氟苯哌苯醚、帕罗昔丁、帕罗克赛、帕克罗塞、赛乐特、赛洛特、舒坦罗、乐友、奥氮平、悉敏、奥兰扎平、奥拉扎平、奥兰氮平、欧兰宁、奥兰宁、再普乐、氯扎平等。以 WanFang Data 为例,具体检索策略见框 1。

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#1 主题:("抑郁症" or "忧郁症" or "抑郁障碍" or "恶劣心境障碍" or "抑郁症状")
#2 主题:("睡眠障碍" or "失眠" or "不寐" or "睡眠")
#3 (#1) AND #2
#4 主题:("帕罗西汀" or "氟苯哌苯醚" or "帕罗昔丁" or "帕罗克赛" or "帕克罗塞" or "赛乐特" or "赛洛特" or "舒坦罗" or "乐友")
#5 主题:("奥氮平" or "悉敏" or "奥兰扎平" or "奥拉扎平" or "奥兰氮平" or "欧兰宁" or "奥兰宁" or "再普乐" or "氯扎平")
#6 (#4) AND #5
#7 (#3) AND #6
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框1 WanFang Data检索策略

Box 1. Search strategy in WanFang Data

1.3 文献筛选与资料提取

由 2 位研究者独立筛选文献、提取资料并交叉核对。若遇分歧,则通过讨论,并交第 3 位研究者协商解决。文献筛选时,首先剔除重复,然后阅读文题和摘要初筛,排除综述类、病例报道类、非干预类、明显不相关的文献,而后阅读全文复筛,最终确定能够纳入系统评价的合格研究。缺

失的资料尽量与通信作者联系予以补充。资料提取内容包括：①研究的基本信息：文题、第一作者、发表年份、国家等；②研究对象的基线特征和干预措施；③偏倚风险评价的关键要素；④所关注的结局指标。

1.4 纳入研究的偏倚风险评价

由 2 位研究者采用 Cochrane 系统评价手册 5.1.0^[13] 推荐的 RCT 的偏倚风险评估工具，对纳入研究的偏倚风险（随机序列产生、分配隐藏、对研究对象和实施者的盲法、对结果评估者的盲法、结果数据的完整性、选择性报告研究结果和其他偏倚来源）进行评价。各自评价完后进行交叉核对，如遇分歧则通过讨论协商解决，或交第 3 位研究者仲裁解决。

1.5 统计学分析

采用 RevMan 5.3 软件进行统计分析。计量资料和计数资料的效应指标分别采用均数差（MD）和比值比（OR），且均给出其点估计值和 95% 置信区间（CI）。采用 Q 检验和 I^2 来判定纳入

研究结果间的异质性及其大小。若 $P > 0.1$ 且 $I^2 < 50\%$ ，则各研究结果间无统计学异质性，采用固定效应模型进行 Meta 分析；若 $P \leq 0.1$ 或 $I^2 \geq 50\%$ ，则各研究结果间存在统计学异质性，在排除明显的临床异质性因素影响后，则采用随机效应模型进行 Meta 分析。若研究间异质性太大或有明显临床异质性的研究可进行亚组分析或敏感性分析，或只行描述性分析。Meta 分析的检验水准为 $\alpha=0.05$ 。采用逐一剔除单项研究的方法进行敏感性分析。使用漏斗图评估潜在的发表偏倚^[14]。

2 结果

2.1 文献筛选流程及结果

初检共获得相关文献 829 篇，经逐层筛选后，最终纳入 70 项研究^[2-3,6,8-9,15-79]，文献筛选流程及结果见图 1。70 个 RCT 包含 5 683 例患者，其中采用帕罗西汀联合奥氮平治疗患者 2 860 例，单用帕罗西汀药物治疗患者 2 823 例，纳入研究的基本特征见表 1。

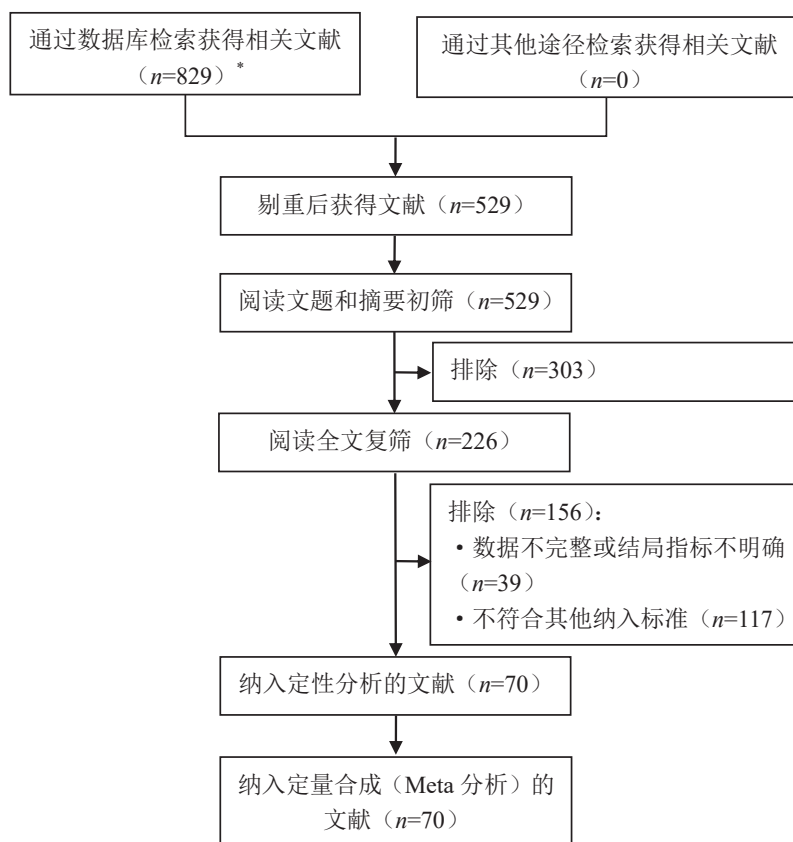


图1 文献筛选流程及结果

Figure 1. Flow chart of literature screening

注：*所检索的数据库及检出文献数具体如下：PubMed (n=135)、Embase (n=87)、Cochrane Library (n=2)、CINAHL (n=71)、SinoMed (n=67)、CNKI (n=286)、VIP (n=55)、WanFang Data (n=115)、SUMsearch (n=4) 和 Google 搜索引擎 (n=7)。

表1 纳入研究的基本特征
Table 1. Baseline characteristics of included studies

纳入研究	例数 (E/C)		性别 (男/女)		年龄 (岁)		病程			剂量 (mg · d ⁻¹)		疗程 (月)	结局 指标
	E	C	E	C	E	C	E	C	C	Px	Op		
李博文 2019 ^[2]	53/53	30/23	28/25	35.32 ± 4.52	37.26 ± 4.69	8~15个月	7~15个月	20~60	10	6	③		
袁伟 2020 ^[3]	68/68	-	-	47.32 ± 5.65	47.32 ± 5.65	(10.43 ± 3.24) 个月	(10.43 ± 3.24) 个月	20~40	10	2	②③		
饶贵优 2019 ^[6]	40/40	15/25	16/24	35.83 ± 3.79	35.64 ± 3.84	(8.51 ± 3.12) 个月	(8.43 ± 3.09) 个月	20~40	10	1	③		
庞春霞 2016 ^[8]	100/100	40/60	59/41	50.32 ± 12.08	53.63 ± 11.91	3个月~20年	3个月~20年	20~40	10	1	①		
陈正平 2015 ^[9]	75/75	27/48	41/34	41.3 ± 10.2	45.6 ± 12.9	3~18个月	5~19个月	20~40	10	1	①③		
吴恩辉 2016 ^[15]	30/30	9/21	8/22	32.5 ± 6.1	30.6 ± 7.2	(3.5 ± 1.4) 年	(2.9 ± 1.3) 年	20	2.5	6	①②③		
孙福刚 2021 ^[16]	34/34	16/18	15/19	43.17 ± 4.64	43.15 ± 4.63	(9.61 ± 1.46) 个月	(9.63 ± 1.47) 个月	20~40	10	1	①②③④		
孟祥军 2018 ^[17]	62/62	28/34	27/35	43.59 ± 8.25	44.02 ± 8.29	(5.38 ± 2.56) 年	(5.41 ± 2.58) 年	20~40	10	-	①		
庞金宇 2021 ^[18]	39/39	21/18	20/19	48.89 ± 5.13	48.38 ± 5.84	-	-	20~40	10	1	①		
廖宗铃 2021 ^[19]	54/54	24/30	23/31	39.54 ± 5.62	38.99 ± 5.71	(2.74 ± 1.02) 年	(2.69 ± 1.05) 年	20~40	10	1	①②		
张建芳 2019 ^[20]	49/49	25/24	28/21	35.23 ± 3.81	35.22 ± 3.79	(7.29 ± 1.05) 个月	(7.26 ± 1.04) 个月	20~40	10	1	①②		
张胜荣 2018 ^[21]	31/31	20/11	18/13	45.1 ± 1.4	44.2 ± 1.5	(9.1 ± 1.6) 个月	(9.2 ± 1.4) 个月	20~40	10~20	2	①②③		
彭汝春 2015 ^[22]	40/40	10/30	12/28	31.4 ± 6.3	30.8 ± 6.5	(2.8 ± 1.5) 年	(2.7 ± 1.2) 年	20	2.5	6	①②③		
徐阿娜 2021 ^[23]	51/51	28/23	29/22	47.62 ± 2.24	47.57 ± 2.19	(9.26 ± 3.64) 个月	(9.25 ± 3.58) 个月	40~60	10	6	①③④		
文晏 2018 ^[24]	20/20	12/8	9/11	28.4 ± 3.5	29.4 ± 3.9	(6.2 ± 1.7) 个月	(6.2 ± 2.7) 个月	20	10	2	①		
朱列和 2016 ^[25]	60/60	36/24	36/24	47.2 ± 11.8	43.5 ± 12.3	(3.8 ± 1.3) 年	(3.2 ± 1.2) 年	20	2.5	6	①②③		
李晓伟 2018 ^[26]	20/20	-	-	41.3 ± 8.1	41.3 ± 8.1	(18.2 ± 1.8) 个月	(18.2 ± 1.8) 个月	20~40	10	-	①		
王亚倩 2021 ^[27]	32/32	16/16	17/15	48.52 ± 1.42	48.55 ± 1.45	(13.52 ± 1.32) 个月	(13.54 ± 1.33) 个月	20~40	10	6周	①		
盛海涛 2020 ^[28]	25/25	15/10	16/9	70.37 ± 3.51	69.23 ± 3.27	(3.03 ± 0.54) 年	(2.11 ± 0.49) 年	20~90	5	-	①		
秦彩丽 2021 ^[29]	65/65	32/33	35/30	49.0 ± 4.7	49.5 ± 5.2	(2.1 ± 0.8) 年	(2.0 ± 0.7) 年	20~40	10	-	①		
耿英华 2021 ^[30]	44/44	24/20	23/21	35.78 ± 3.96	36.42 ± 4.13	(7.52 ± 1.04) 个月	(7.13 ± 1.10) 个月	20~40	10	6周	①②③		
腾丽娟 2016 ^[31]	50/50	29/21	28/22	34.61 ± 3.44	34.59 ± 3.42	(8.42 ± 3.11) 个月	(8.46 ± 3.13) 个月	20~40	10	1	①		
董朝卿 2022 ^[32]	35/35	17/18	18/17	32.13 ± 6.42	31.72 ± 5.92	(3.33 ± 1.92) 年	(3.23 ± 1.52) 年	20	2.5	6	①②③		
裴晓媛 2016 ^[33]	48/48	-	-	44.9 ± 11.7	44.9 ± 11.7	(7.6 ± 5.8) 年	(7.6 ± 5.8) 年	20~40	5~10	-	①		
赵丽丽 2018 ^[34]	50/50	24/26	25/25	35.19 ± 3.81	35.25 ± 3.85	(7.47 ± 1.03) 个月	(7.34 ± 1.05) 个月	20~40	10	1	①②		
陈金稳 2015 ^[35]	70/70	28/42	30/40	41.3 ± 4.7	43.5 ± 5.6	(12.5 ± 1.5) 个月	(10.5 ± 1.8) 个月	20~40	10	1	①		
饶晓红 2018 ^[36]	45/45	23/22	21/24	48.7 ± 10.1	47.8 ± 7.1	(24.31 ± 2.51) 个月	(24.86 ± 2.24) 个月	20~40	10	1	①		
鲁晓亮 2018 ^[37]	37/37	21/16	19/18	42.10 ± 6.40	42.28 ± 6.37	(5.11 ± 2.23) 年	(5.03 ± 2.17) 年	20~40	10	1	①		

续表1

纳入研究	例数 (E/C)		性别 (男/女)		年龄 (岁)		病程			剂量 (mg·d ⁻¹)		疗程 (月)	结局 指标
	E	C	E	C	E	C	E	C	Px	Op			
鲁莉侠 2016 ^[38]	21/19	8/11	32.1 ± 6.4	31.7 ± 5.9	(3.3 ± 1.9) 年	(3.2 ± 1.5) 年	20	2.5	20	2.5	6	①②③	
付园园 2021 ^[39]	37/37	22/15	43.47 ± 4.15	43.58 ± 4.21	(10.17 ± 2.41) 个月	(10.23 ± 2.35) 个月	20	10~20	20	10~20	1	②	
刘雪朋 2022 ^[40]	41/41	16/25	41.23 ± 12.41	40.56 ± 12.07	(8.71 ± 3.54) 个月	(8.55 ± 3.06) 个月	20~40	10~20	20~40	10~20	3	②③	
夏青 2022 ^[41]	50/50	27/23	44.5 ± 3.1	44.3 ± 3.2	(1.9 ± 0.3) 年	(1.8 ± 0.3) 年	20	10	20	10	1	②③	
杨成超 2018 ^[42]	41/41	25/16	44.24 ± 5.46	44.21 ± 5.43	(10.48 ± 3.14) 个月	(10.49 ± 3.13) 个月	20~40	10~20	20~40	10~20	1	②	
杨栋梁 2018 ^[43]	40/40	14/26	33.7 ± 1.2	32.6 ± 1.3	(5.0 ± 1.3) 年	(4.8 ± 1.2) 年	20	2.5	20	2.5	6	②③	
王梦觉 2018 ^[44]	42/42	23/19	35.6 ± 5.3	35.3 ± 5.8	-	-	20~40	10	20~40	10	1	②	
王飞雪 2015 ^[45]	50/50	24/26	41 ± 7	40 ± 6	-	-	20~40	2.5	20~40	2.5	6	②③④	
王鸿儒 2012 ^[46]	88/83	36/52	40.17 ± 13.6	43.1 ± 13.0	(20.4 ± 18.1) 个月	(20.4 ± 18.1) 个月	20	2.5	20	2.5	6	②③④	
迟云鹏 2020 ^[47]	26/26	13/13	25~54	26~53	-	-	20~40	10~20	20~40	10~20	1	②	
邹颖 2022 ^[48]	42/42	22/20	43.81 ± 9.36	43.78 ± 9.42	(4.81 ± 1.02) 年	(4.74 ± 1.06) 年	20~50	10~20	20~50	10~20	1	②③	
高照莲 2018 ^[49]	31/31	17/14	44.19 ± 5.36	44.15 ± 5.29	(10.58 ± 3.25) 个月	(10.43 ± 3.07) 个月	20~40	10~20	20~40	10~20	1	②	
于方舟 2021 ^[50]	90/90	42/48	34.1 ± 3.3	34.5 ± 3.5	(15.2 ± 3.8) 个月	(15.7 ± 3.8) 个月	20~40	10~20	20~40	10~20	2	②	
候宁 2020 ^[51]	40/40	17/23	39.58 ± 6.42	40.25 ± 6.71	(7.92 ± 1.33) 个月	(8.13 ± 1.28) 个月	20~60	10	20~60	10	2	②	
杨冬林 2016 ^[52]	42/42	28/14	56.58 ± 6.48	57.11 ± 6.14	(20.14 ± 3.21) 个月	(19.65 ± 2.64) 个月	20	10	20	10	6	②③	
萧灿宏 2019 ^[53]	34/34	15/19	24~63	25~61	-	-	20	2.5	20	2.5	3	②③	
贺守彬 2020 ^[54]	44/44	22/22	41.62 ± 6.54	40.21 ± 5.13	(4.01 ± 0.71) 年	(3.54 ± 0.53) 年	20	2.5	20	2.5	6	②③	
赵玲 2021 ^[55]	50/50	22/28	40.50 ± 5.40	40.52 ± 5.45	(3.42 ± 1.65) 年	(3.41 ± 1.62) 年	20	2.5	20	2.5	3	②③④	
陶司磊 2018 ^[56]	35/35	-	45.68 ± 5.49	45.68 ± 5.49	(24.36 ± 2.29) 个月	(24.36 ± 2.29) 个月	20	10	20	10	6	②③	
冉芬 2017 ^[57]	46/46	24/22	48.4 ± 15.2	49.1 ± 15.6	-	-	20	2.5	20	2.5	6	②③④	
吴磊 2015 ^[58]	75/75	-	37.6 ± 15.3	37.6 ± 15.3	(2.7 ± 0.6) 年	(2.7 ± 0.6) 年	20	2.5	20	2.5	2	②③④	
尚兴盛 2016 ^[59]	33/32	14/19	43.5 ± 4.6	42.8 ± 4.4	(3.2 ± 0.6) 年	(4.3 ± 0.8) 年	20	2.5	20	2.5	6	②③	
方明 2019 ^[60]	46/46	-	43.2 ± 6.3	43.7 ± 6.4	(24.0 ± 10.3) 个月	(24.0 ± 10.2) 个月	20	2.5	20	2.5	6	②③	
南晓荣 2019 ^[61]	30/30	-	34.62 ± 3.43	34.62 ± 3.43	(8.41 ± 3.12) 个月	(8.41 ± 3.12) 个月	20~40	10	20~40	10	1	③	
孟召海 2019 ^[62]	25/25	-	34.7 ± 4.5	34.9 ± 4.7	(5.66 ± 2.17) 年	(5.69 ± 2.72) 年	20~50	10~20	20~50	10~20	1	③	
廖英 2017 ^[63]	49/49	21/28	46.78 ± 9.83	46.83 ± 9.86	(13.21 ± 3.18) 个月	(13.24 ± 3.21) 个月	20~40	2.5~5.0	20~40	2.5~5.0	1	③	
张晓 2018 ^[64]	39/39	19/20	37.56 ± 3.52	38.76 ± 3.41	-	-	10~40	20	10~40	20	1	③	
张海涛 2020 ^[65]	60/60	35/25	35.33 ± 4.51	37.25 ± 4.68	-	-	20~60	10	20~60	10	6	③	
徐冰 2019 ^[66]	54/54	-	40.2 ± 3.3	40.2 ± 3.3	(8.1 ± 1.2) 个月	(8.1 ± 1.2) 个月	20~40	10	20~40	10	1	③	
李大坤 2016 ^[67]	34/34	19/15	49.2 ± 1.6	49.1 ± 1.5	(12.2 ± 1.0) 个月	(12.1 ± 0.9) 个月	20~40	10	20~40	10	2	③	

续表1

纳入研究	例数 (E/C)		性别 (男/女)		年龄 (岁)		病程			剂量 (mg·d ⁻¹)		疗程 (月)	结局 指标
	E	C	E	C	E	C	E	C	Px	Op			
李志鹏 2022 ^[68]	14/16	12/18	35.83 ± 7.17	36.52 ± 6.98	(13.94 ± 3.62) 个月	(13.29 ± 4.06) 个月	20~40	5	1	③④			
李晶晶 2018 ^[69]	-	-	32.16 ± 3.26	32.16 ± 3.26	(8.06 ± 2.73) 个月	(8.06 ± 2.73) 个月	20~40	10~20	2	③			
林三妹 2017 ^[70]	26/14	22/18	48.6 ± 12.4	47.5 ± 9.8	(8.55 ± 3.46) 个月	(8.68 ± 4.21) 个月	20	10	1	③			
段能 2018 ^[71]	19/14	18/15	49.1 ± 2.7	49.3 ± 2.4	(7.9 ± 0.6) 个月	(7.8 ± 0.9) 个月	40	10	1	③			
鲜晓华 2021 ^[72]	48/52	50/50	48.9 ± 3.7	49.6 ± 3.5	-	-	40	10	1	③			
齐艳 2017 ^[73]	23/17	22/18	33.82 ± 3.34	34.61 ± 3.42	(8.12 ± 3.05) 个月	(8.24 ± 3.12) 个月	20~40	10~20	2	③			
彭成国 2014 ^[74]	-	-	43.7 ± 6.3	43.4 ± 6.6	1~4 年	1~4 年	20	2.5	2	③④			
武善田 2020 ^[75]	13/11	14/10	48.69 ± 5.63	48.77 ± 5.85	(4.12 ± 1.09) 年	(4.07 ± 1.02) 年	20	20	6	③④			
徐健雄 2019 ^[76]	14/20	16/18	47.2 ± 2.4	46.6 ± 2.6	(21.5 ± 4.5) 个月	(20.9 ± 4.8) 个月	20	2.5	3	③			
陈晨 2022 ^[77]	23/19	22/20	45.83 ± 2.09	45.11 ± 2.41	-	-	10~40	2.5	3	③			
王传文 2021 ^[78]	-	-	36.6 ± 3.5	36.6 ± 3.5	(1.6 ± 0.5) 年	(1.6 ± 0.5) 年	20	2.5	6	③			
陈晓红 2016 ^[79]	14/10	10/6	38.8 ± 12.4	37.5 ± 13.3	(4.1 ± 1.2) 年	(3.6 ± 0.4) 年	20	5	-	④			

注: E: 试验组; C: 对照组; -: 未提及; Px: 帕罗西汀; Op: 奥氮平; ①总有效率; ②PSQI评分; ③HAMMD评分; ④HAMA评分。

2.2 纳入研究的偏倚风险评价

①随机序列产生: 36 项研究仅提及了随机; 25 项研究采用了随机数字表、抽签法和计算机生成随机数法等正确随机化程序; 9 项研究是按入院时间、治疗方式、姓名编号和临床医师判断等方式产生的非随机序列。②分配隐藏: 19 项研究采用电话、密封信封等隐藏方式编号, 23 项研究采用出生日期、病历号等非隐藏过程, 28 项研究未描述或无法判断分配隐藏方法。③对研究对象与实施者的盲法: 13 项研究实施了盲法, 38 项研究未采用盲法, 19 项研究无法判定。④对结局评估者实施盲法: 54 项研究实施了盲法且不会被破坏, 4 项研究未采用盲法, 12 项研究无法判定。⑤结局数据不完整: 57 项研究结局数据完整, 12 项研究缺失数据不足以严重影响研究效应值, 1 项研究信息不全无法判定。⑥选择性报告: 69 项研究未出现选择性报告结果, 1 项研究未报告主要结局指标。⑦其他偏倚: 53 项研究无其他偏倚来源, 7 项研究有潜在的偏倚, 10 项研究无法判定。纳入研究的偏倚风险评价具体结果见图 2 和图 3。

2.3 Meta分析结果

2.3.1 总有效率

共纳入 26 项研究^[8-9,15-38], 包含 2 372 例患者。固定效应模型 Meta 分析结果显示, 试验组的总有效率显著高于对照组, 差异有统计学意义 [OR=5.98, 95%CI (4.51, 7.94), P < 0.001]。见图 4。

2.3.2 PSQI评分

共纳入 34 项研究^[3,15-16,19-22,25,30,32,34,38-60], 包含 4 660 例患者。随机效应模型 Meta 分析结果显示, 试验组患者的 PSQI 评分显著低于对照组, 差异有统计学意义 [MD=-2.42, 95%CI (-2.57, -2.26), P < 0.001]。按治疗时间行亚组分析, 结果显示, PSQI 评分在治疗后 1 个月 [MD=-2.81, 95%CI (-3.24, -2.38), P < 0.001]、治疗后 2 个月 [MD=-2.41, 95%CI (-3.13, -1.70), P < 0.001]、治疗后 3 个月 [MD=-2.80, 95%CI (-3.18, -2.42), P < 0.001] 和治疗后 6 个月 [MD=-1.65, 95%CI (-1.83, -1.48), P < 0.001] 均明显低于对照组, 且差异均有统计学意义。见图 5。

2.3.3 HAMD评分

共纳入 46 项研究^[2-3,6,9,15-16,21-23,25,30,32,38,40-41,43,45-46,48,52-78], 包含 6 522 例患者。随机效应模型 Meta 分析结果显示, 试验组患者的 HAMD 评分显著低于

对照组, 差异有统计学意义 [MD=-4.48, 95%CI (-4.76, -4.19), $P < 0.001$]。按治疗时间行亚组分析, 结果显示, HAMD 评分在治疗后 1 个月 [MD=-5.79, 95%CI (-6.63, -4.95), $P < 0.001$]、治疗后 2 个月 [MD=-4.33, 95%CI (-5.45, -3.21),

$P < 0.001$]、治疗后 3 个月 [MD=-3.76, 95%CI (-4.17, -3.34), $P < 0.001$] 和治疗后 6 个月 [MD=-3.38, 95%CI (-3.60, -3.15), $P < 0.001$] 均明显低于对照组, 且差异均有统计学意义。见图 6。

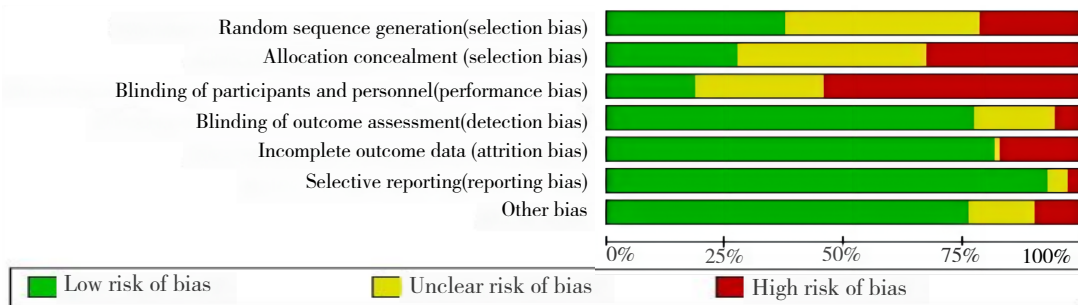


图2 纳入研究的整体偏倚风险评价

Figure 2. Evaluation of the overall risk of bias in the included studies

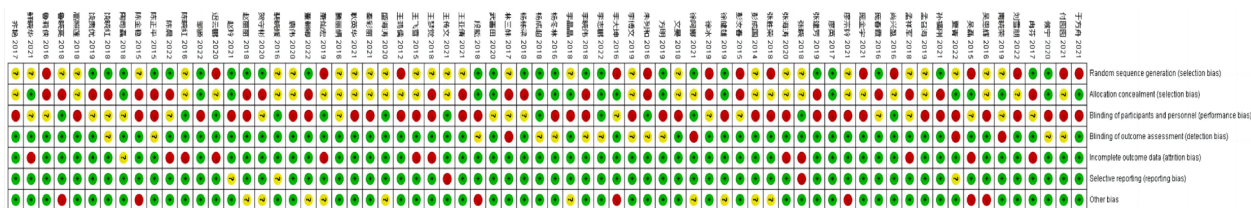


图3 纳入研究的个体偏倚风险评价

Figure 3. Evaluation of the risk of individual bias in the included studies

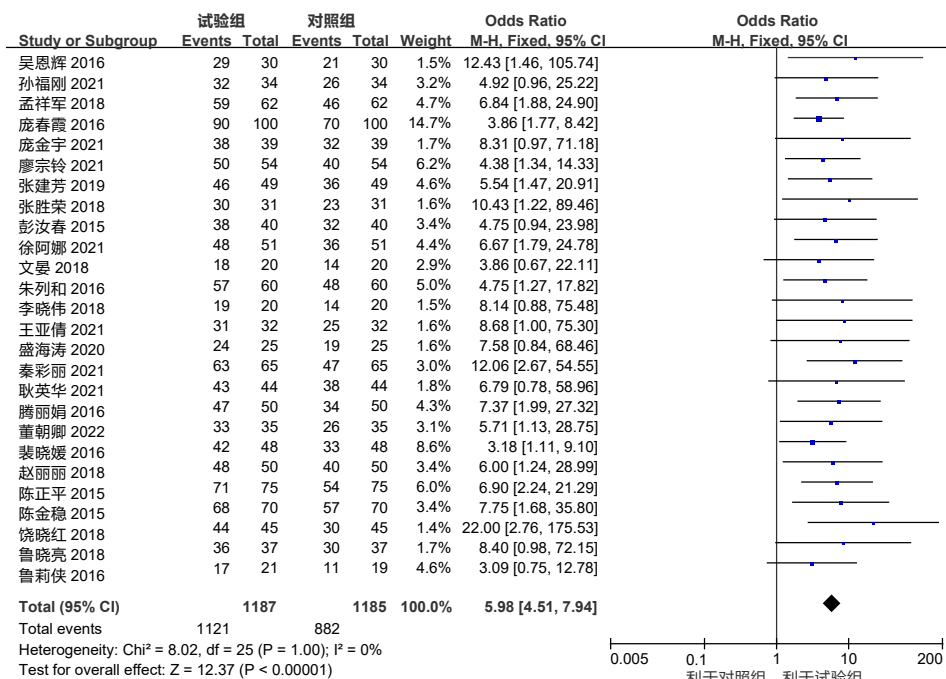


图4 试验组与对照组总有效率比较的Meta分析

Figure 4. Meta-analysis of the total effective rate in experimental group vs. control group

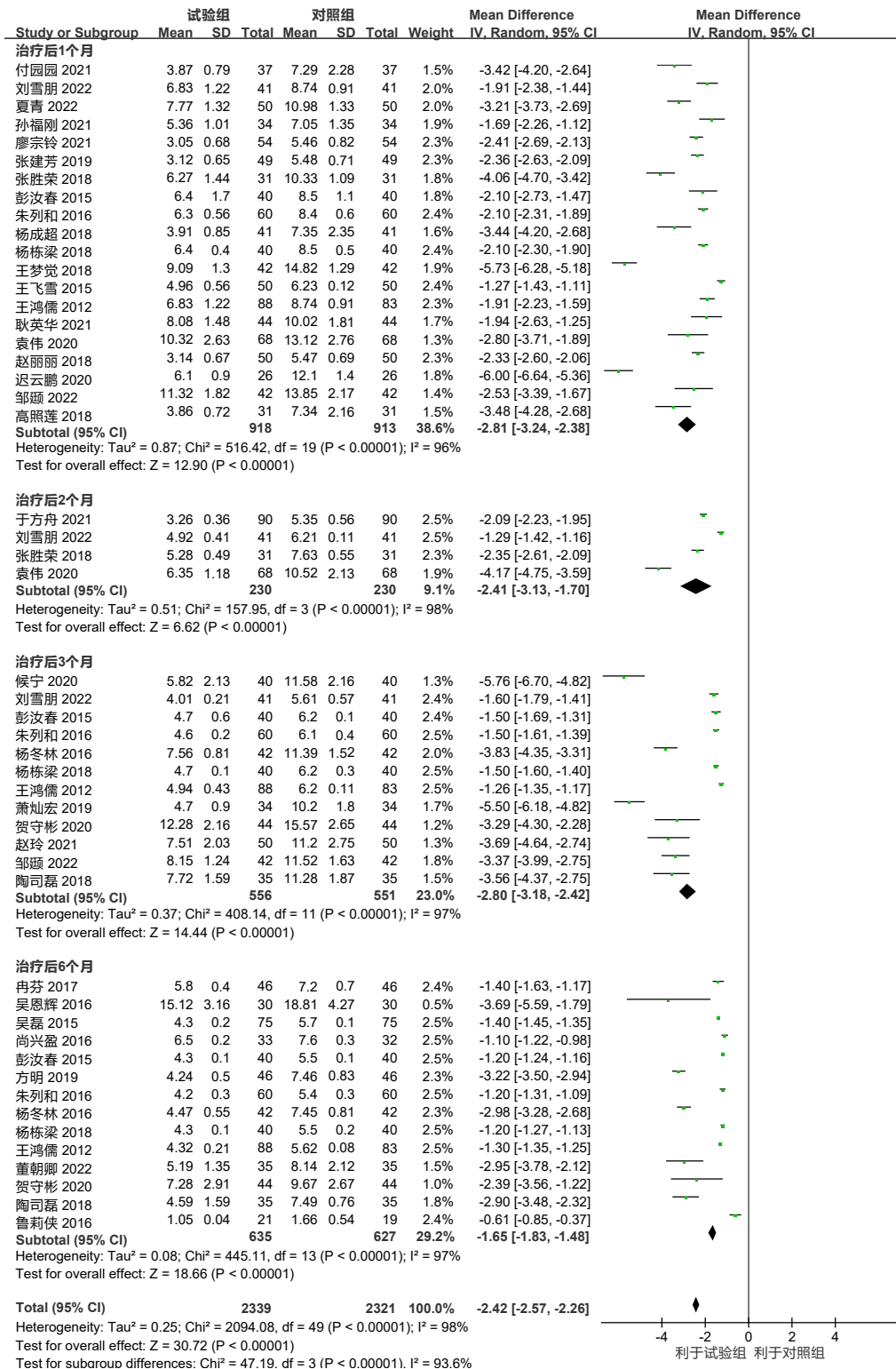


图5 试验组与对照组PSQI评分比较的Meta分析

Figure 5. Meta-analysis of the PSQI scores in experimental group vs. control group

2.3.4 HAMA评分

共纳入 11 项研究 [16,23,45-46,55,57-58,68,74-75,79]，包含 1 071 例患者。随机效应模型 Meta 分析结果显示，

试验组患者的 HAMA 评分显著低于对照组，差异有统计学意义 [MD=-3.47, 95%CI(-3.78, -3.16) , P < 0.001]，见图 7。

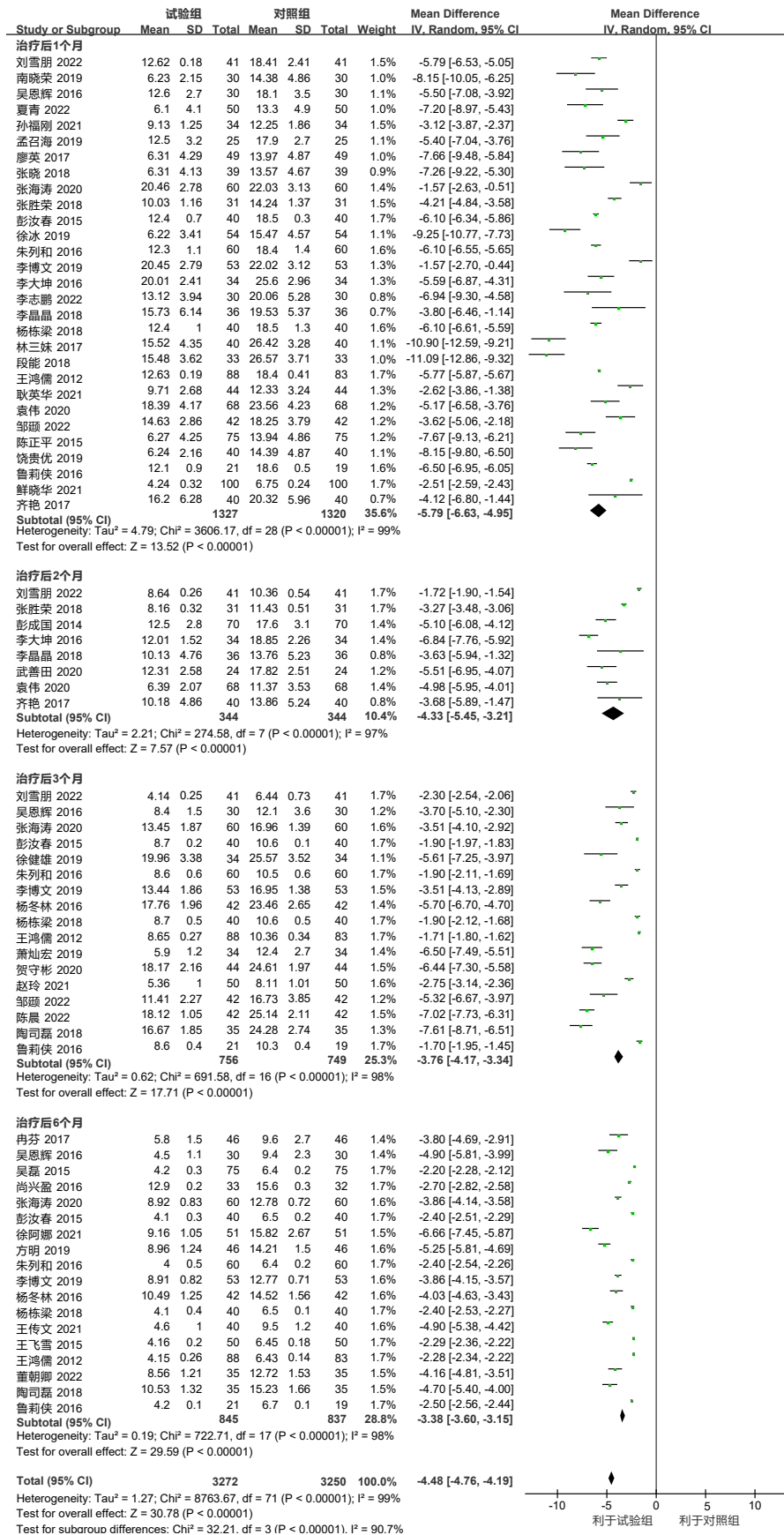


图6 试验组与对照组 HAMD评分比较的Meta分析

Figure 6. Meta-analysis of the HAMD scores in experimental group vs. control group

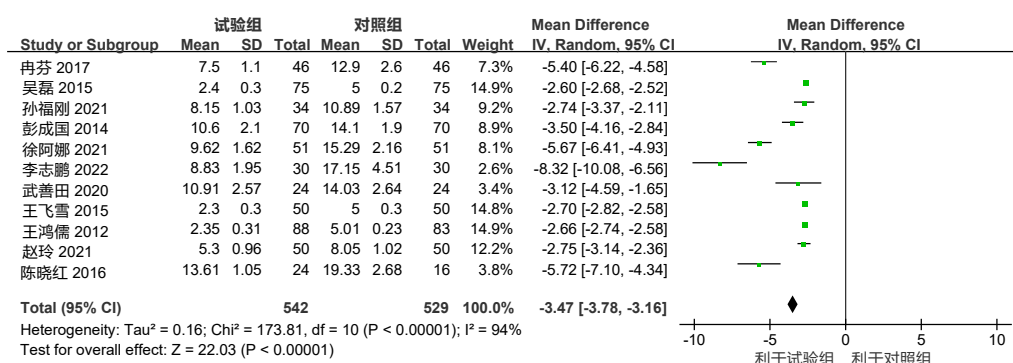


图7 试验组与对照组 HAMA评分比较的Meta分析

Figure 7. Meta-analysis of the HAMA scores in experimental group vs. control group

2.3.5 敏感性分析

对各结局指标通过逐一剔除单项研究的方法进行敏感性分析。结果显示，剔除后与剔除前 Meta 分析结果的效应量未发生明显改变，提示研究结果稳定。

2.3.6 发表偏倚分析

针对治疗总有效率的漏斗图显示，26 项研究^[8-9,15-38]分布在漏斗两侧，但并非完全对称，提示存在一定的发表偏倚。见图 8。

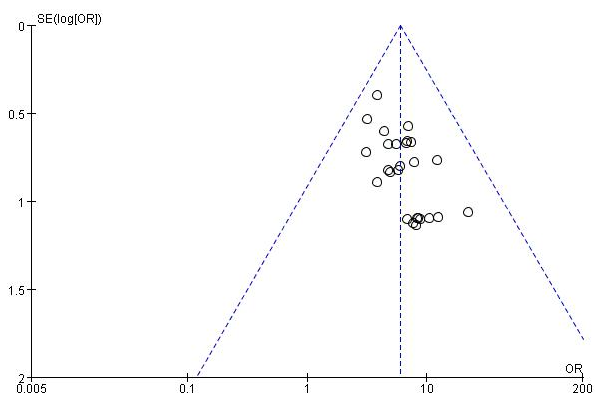


图8 试验组与对照组总有效率指标的漏斗图

Figure 8. Funnel-plot of the total effective rate in experimental group versus control group

3 讨论

近年来，抑郁症患者的睡眠障碍是研究者们关注的热点，也是临床工作的重难点。睡眠障碍和抑郁症之间存在着复杂而密切的双向联系^[80-81]。睡眠障碍是抑郁症状群中常见的重要组成部分，被 ICD-11^[11] 和 CCMD-3^[12] 等诊断分类系统列为抑郁症诊断标准之一。睡眠障碍不仅是抑郁症的典型症状之一，长期睡眠障碍也是抑郁症的独立危险因素。研究^[46,82]证实，睡眠障碍可增加抑郁症

的发病、复发和自杀风险。此外，研究^[68]显示，长期睡眠障碍会加重患者病情。鉴于此，选择临床疗效好、有效改善睡眠质量并减轻抑郁症状的药物联合治疗抑郁症合并睡眠障碍患者显得尤为关键。本研究采用 Meta 分析方法，系统、全面地分析了帕罗西汀联合奥氮平与单用帕罗西汀两种治疗方案对抑郁症合并睡眠障碍患者临床疗效的影响，为抑郁症合并睡眠障碍患者的药物治疗提供了科学依据。

本研究中疗效的判定标准参照抑郁症并发睡眠障碍疾病诊断标准中的睡眠质量指数评分和抑郁症状评分，其中睡眠质量指数采用 PSQI 量表进行评估；抑郁症状评分采用 HAMD 量表评估。试验组的总有效率显著高于对照组，PSQI 评分和 HAMD 评分均显著低于对照组，且治疗后的 1 个月、2 个月、3 个月和 6 个月均明显低于对照组。总有效率与 PSQI 评分、HAMD 评分的结论相一致。这说明与单用帕罗西汀相比，帕罗西汀联合奥氮平治疗我国抑郁症合并睡眠障碍患者的总有效率更高，更能有效改善抑郁症状和睡眠质量。

帕罗西汀联合奥氮平治疗抑郁症合并睡眠障碍患者能更有效地改善抑郁症状，这一结论与国内学者的研究^[21-23,38,40-41,72]结果相符。抑郁症的发病机制可能与中枢去甲肾上腺素和 5-HT 功能低下有关，以及与中脑边缘系统多巴胺功能失调和受体功能低下密切相关。帕罗西汀是强效选择性 5-HT 再摄取抑制剂，作为抑郁障碍治疗的 A 级推荐药物^[83]。该药通过抑制 5-HT 的再吸收提高神经突触间隙内 5-HT 浓度，有效提高 5-HT 指标，促进抑郁症状缓解，进而发挥抗抑郁的效果^[77]。但单用帕罗西汀的早期对睡眠障碍无改善作用，且易早醒。针对抑郁症合并睡眠障碍患者

情况,可联合奥氮平用药。奥氮平通过作用于多巴胺 D₁、D₂、D₄ 受体,拮抗阻断 5-HT_{2A/2C} 受体、5-HT₃ 受体和肾上腺素能 α₂ 受体,减少间脑边缘系统多巴胺能神经元释放,从而产生抗抑郁作用^[70,74]。另外,研究^[84]显示,部分非典型抗精神病药在小剂量下可发挥抗抑郁作用,在大剂量下可具有抗精神病和抗躁狂作用。王鸿儒^[46]报道,接受小剂量奥氮平治疗患者的治疗脱落率低于接受较大剂量药物治疗者。因此,建议帕罗西汀联合小剂量奥氮平治疗抑郁症合并睡眠障碍患者的抑郁症状。

帕罗西汀联合奥氮平治疗抑郁症合并睡眠障碍患者能更有效地改善睡眠质量,这一结论与国内学者的研究^[19-22,32,53]结果相符。睡眠障碍是抑郁症患者常见的症状,表现为入睡困难、睡眠维持困难、睡眠连续性障碍、夜惊、多梦、睡眠浅、易醒、睡眠时间较短、早醒等症状。睡眠质量下降,加之患者心境低落的抑郁状态,使患者白天精神疲惫、无精打采,造成更大的心理压力,降低工作和学习效率,严重影响患者的身心健康,甚至产生自杀倾向。当睡眠障碍持续时间较长,可造成患者大脑皮层功能失调,引起植物神经紊乱,出现偏头晕、偏头痛等症状,甚至免疫能力下降,影响细胞新陈代谢,缩短患者寿命。抑郁症合并睡眠障碍的发生机制可能与单胺能神经递质传递降低有关^[52,69]。帕罗西汀虽有较好的抗抑郁效果,但其对 5-HT₂ 受体的兴奋作用,在用药早期会加重入睡和睡眠维持障碍,增加觉醒次数和时间,易早醒,加重患者的睡眠障碍。然而,帕罗西汀与奥氮平联用后,可增加患者的慢波睡眠和睡眠连续性,增效患者的睡眠结构,从而改善患者的睡眠质量。帕罗西汀用药 2~4 周对抑郁症状起效,抑郁严重程度会有所减轻,6~8 周左右睡眠障碍也随之会有所改善。此外,奥氮平可通过有效阻断网状结构上行激活系统中的肾上腺素能 α 受体发挥镇静作用,从而改善患者睡眠情况。同时,奥氮平对 5-HT_{2A} 受体的亲和力很强,即使小剂量应用该药,也可增加慢波睡眠。

本研究显示,试验组患者的 HAMA 评分显著低于对照组,说明与单用帕罗西汀相比,帕罗西汀联合奥氮平能显著降低抑郁症合并睡眠障碍患者的焦虑水平。研究^[1]显示,约 90% 以上抑郁患者伴发焦虑状态,再合并睡眠障碍,该类患者

病情严重,情绪情感复杂,易增加患者自杀倾向。抑郁症合并睡眠障碍伴焦虑状态者,体内 5-HT 水平大幅度降低。小剂量奥氮平是常见的抗抑郁药物,也是多种受体的拮抗剂,可有效促进去甲肾上腺素,同时对 5-HT 能神经元胞体上受体形成刺激,提高体内 5-HT 水平,但突触前 5-HT_{1A} 自身受体激动作用大于突触后 5-HT_{1A} 受体激动作用,因而产生负反馈作用,使患者过高的 5-HT 活性降低,从而缓解焦虑症状。

本 Meta 分析存在一定局限性:①纳入均为中文文献,虽然纳入了 70 篇文献,共 5 683 例抑郁症合并睡眠障碍患者,极大增加了样本量,但文献的方法学质量稍偏低,对本文的研究结果进行解释和应用时,仍需要谨慎对待;②关于 PSQI 评分、HAMD 评分、HAMA 评分等结局指标,纳入研究的结果之间存在统计学异质性,可能与未采取分配序列的隐藏方法及是否采用盲法等因素有关^[85];③纳入的文献均为已公开发表的研究(69 篇期刊论文,1 篇硕士论文),未纳入博士论文、会议论文、未发表的临床资料等灰色文献,可能存在一定的发表偏倚;④对于 HAMA 评分这一结局指标,可能需要更多高质量研究予以验证结论的真实性;⑤虽然纳入研究的试验组均采用帕罗西汀联合奥氮平药物治疗,对照组均采用帕罗西汀药物治疗,但药物剂量使用存在一定差异,如帕罗西汀开始使用时每日剂量为 20 mg,但需按照患者病情进行调整至 40 mg;奥氮平的每日剂量有 2.5 mg, 5 mg, 10 mg, 剂量不同可能会对疗效有影响,因此,在以后的研究中,应尽可能进行亚组分析。

综上所述,当前研究证据显示,与单用帕罗西汀治疗我国抑郁症合并睡眠障碍患者相比,帕罗西汀联合奥氮平能提高临床治疗的总有效率,改善治疗后 1 个月、2 个月、3 个月、6 个月的睡眠质量和抑郁症状,且降低焦虑情绪。联合用药比单独用药具有明显的优势,故建议临床推广帕罗西汀联合小剂量奥氮平治疗抑郁症合并睡眠障碍患者。受纳入研究数量和质量限制,上述研究结论尚需要更多高质量研究来进行验证。

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