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药物干预和手术切除治疗儿童阻塞性睡眠呼吸暂停低通气综合征的疗效评估*

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摘要 目的：对比分析药物干预和手术切除治疗儿童阻塞性睡眠呼吸暂停低通气综合征(OSAHS)的临床疗效。**方法**：应用随机数字表法将2015年2月至2017年11月经本院确诊的100例OSAHS患儿分为药物组、手术组，每组50例。药物组采用孟鲁司特钠治疗6个月，手术组行腺样体和扁桃体切除术。6个月后比较两组患儿多导睡眠图监(PSG)的监测结果和生活质量情况，比较两组疗效评定情况，记录手术组无效及并发症的原因。**结果**：6个月后，药物组、手术组患儿呼吸暂停低通气指数(AHI)、阻塞性呼吸暂停指数(OAI)、微觉醒指数(MAI)和睡眠呼吸紊乱指数(RDI)较治疗前降低，且手术组患儿AHI低于药物(P<0.05)。手术组患儿6个月后睡眠障碍、对监护人的影响、身体症状评分较治疗前降低，且低于药物组(P<0.05)，而药物组治疗前后OSA-18评分各指标比较差异无统计学意义(P>0.05)。手术组患儿总有效率为90.00%(45/50)，高于药物组的50.00%(25/50)，差异有统计学意义(P<0.05)。手术组患儿有出血现象的4例、伴舌后坠2例、上呼吸反复道感染6例和鼻炎5例，无效的5例患儿为伴有肥胖的重度OSAHS。**结论**：对于OSAHS患儿，药物干预和手术切除均可改善患儿PSG指标水平，但手术切除治疗可提高患儿生活质量和治疗有效率。

关键词：阻塞性睡眠呼吸暂停低通气综合征；儿童；药物干预；手术切除；疗效

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Efficacy of Drug Intervention and Surgical Resection in the Treatment of Obstructive Sleep Apnea Hypopnea Syndrome in Children*

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ABSTRACT Objective: To comparative analysis the clinical efficacy of drug intervention and surgical resection in the treatment of obstructive sleep apnea hypopnea syndrome (OSAHS) in children. **Methods:** 100 children with OSAHS diagnosed in our hospital from February 2015 to November 2017 were divided into drug group and operation group by random number table method, 50 cases in each group. The drug group was treated with montelukast for 6 months, while the operation group underwent adenoadenectomy and tonsillectomy. After 6 months, the polysomnography (PSG) monitoring results and quality of life between the two groups were compared. The efficacy of each group was compared, and the reasons for invalid operation and complications were recorded. **Results:** After 6 months, the apnea hypopnea index (AHI), obstructive apnea index (OAI), micro awakening index (MAI) and respiratory disturbance index (RDI) in the drug group and the operation group were lower than before treatment, and the AHI in the operation group was lower than that in the drug group (P<0.05). After 6 months, the sleep disorder, influence on the guardian, scores of the body symptoms in the operation group were lower than before treatment, and lower than in the drug group(P<0.05), but there was no significant difference between the OSA-18 scores of the drug group before and after the treatment (P>0.05). The total effective rate in the operation group were 90.00% (45/50), which were higher than 50.00%(25/50) in the drug group, the difference was statistically significant (P<0.05). There were 4 cases of bleeding in the operation group, 2 cases with lingual fall, 6 cases of recurrent upper respiratory tract infection and 5 cases of rhinitis, and 5 cases of ineffective children with severe OSAHS with obesity. **Conclusion:** For children with OSAHS, drug intervention and surgical resection can improve the level of PSG in children, but surgical resection can improve the quality of life and treatment efficiency in children.

Key words: Obstructive sleep apnea hypopnea syndrome; Children; Drug intervention; Surgical resection; Curative effect

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前言

阻塞性睡眠呼吸暂停低通气综合征（obstructive sleep apnea hypopnea syndrome，OSAHS）指的是以长时间的局部和/或

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间歇性的上气道完全梗阻为特征的睡眠呼吸障碍性疾病，病因尚不清楚[1-3]。OSAHS 为临床儿科中的常见病，有研究表明，儿童 OSAHS 的患病率为 1%-3%，尤以 2-8 岁的儿童患病率高[4]。OSAHS 扰乱了儿童正常的睡眠通气和睡眠过程，进而影响其正常的生长发育。主要临床表现为夜间打鼾，白天嗜睡或哭闹，有的甚至发生严重的并发症，其主要的病理生理学机制为反复发作的低氧血症和高碳酸血症[5,6]。近来许多学者对 OSAHS 患儿的治疗方案进行了长期的探究，目前治疗 OSAHS 的方法大致可分为三类，即持续正压通气、药物治疗和外科手术[7,8]。持续正压通气可改善患儿呼吸功能，但是由于患儿对面罩的不适应性及面罩漏气等原因导致依从性差[9]。外科手术为根治儿 OSAHS 的最常用手段，然而许多研究发现其术后并发症较多，且需密切的术后护理[10]。近年来，药物干预在缓解儿童睡眠呼吸紊乱中具有较好的疗效，且患儿的依从性较好[11]。本研究旨在对比分析药物干预和手术切除治疗儿童 OSAHS 的临床疗效。

1 材料与方法

1.1 一般材料

选取 2015 年 2 月至 2017 年 11 月我院确诊的 OSAHS 患儿 100 例，所有患儿均符合中华医学会耳鼻咽喉头颈外科学分会咽喉学组制定的《OSAHS 诊疗方案指南》[12]，排除中枢性睡眠障碍、发作性睡病、喉痉挛等以及先天性心脏病等疾病不宜手术者。应用随机数字表法分为药物组和手术组，每组 50 例。药物组男 22 例，女 28 例，年龄(5.48± 1.96)岁，病情严重程度：轻度 7 例、中度 28 例、重度 15 例；手术组男 23 例，女 27 例，年龄(5.90± 2.08)岁，病情严重程度：轻度 9 例、中度 25 例、重度 16 例。两组一般资料比较均无统计学差异(P>0.05)，具有可比性。本研究均经家属知情同意，所进行的研究遵循我院伦理委员会规范。

1.2 治疗方法

药物组给药方案：口服孟鲁司特钠咀嚼片(鲁南贝特制药有限公司，批准文号：国药准字 H20083330)，2-5 岁 4 mg 每天；6-13 岁 5 mg 每天，每天服用 1 次，治疗 6 个月。手术组患儿转至耳鼻咽喉科，2 周内行常规剥离法双侧扁桃体切除和鼻内镜下腺样体切除。治疗期间密切观察患儿的临床症状和体征，出现不良反应给予及时治疗，观察并发症等不良后果，分析未治愈原因。

1.3 观察指标

所有患儿均在治疗前和 6 个月后比较多导睡眠图监(polysomnography，PSG) 监测结果和生活质量调查表评分，比较两组疗效评定情况，记录手术组无效及并发症的原因。

1.3.1 PSG 监测 应用德国 SOMNOscreen 多导睡眠监测仪，全夜监测每组患儿睡眠 8 h 以上。患儿监测时尽量少睡，禁止饮用茶、可乐等含咖啡因的饮料，禁止服安眠药等促睡眠药物。电脑以每屏 20 s 的速度记录相关数据资料。监测内容包括口及鼻通气量，胸腹呼吸图，血氧饱和度，脑、心、眼和肌电图等。主要指标有呼吸暂停低通气指数(apnea hypopnea index, AHI)、阻塞性呼吸暂停指数(obstructive apnea index, OAI)、微觉醒指数(micro arousal index, MAI) 和睡眠呼吸紊乱指数(respiratory disturbance index, RDI)。

1.3.2 OSAHS 患儿生活质量调查表 根据 OSA-18 量表，询问患儿父母了解患儿生活情况并进行评分。调查表主要内容：睡眠障碍、身体症状、情绪不佳、白天功能和对患儿监护人的影响 5 个内容，根据每个项目的内容出现次数的多少进行评分：1 分(绝对没有)、2 分(几乎没有)、3 分(很少)、4 分(有时)、5 分(常有)、6 分(多半有)、7 分(绝对有)。分数越高表明阻塞程度越严重，对患儿生活质量的影响越大。

1.3.3 疗效评判标准 根据患儿 AHI 进行疗效评定：治愈为 AHI<5 次 /h；显效为 AHI<20 次 /h 且降低幅度≥ 50%；有效为 AHI 降低幅度≥ 50%，其他为无效，总有效率 = 治愈率 + 显效率 + 有效率。

1.4 统计学方法

运用 SPSS20.0 进行统计分析，采用($\bar{x}$± s)表示计量资料，实施 t 检验，采用[n(%)]表示计数资料，实施 x^2 检验，以 α=0.05 为统计学检验水准。

2 结果

2.1 两组治疗前后 PSG 监测结果

治疗前，两组 PSG 监测指标比较差异无统计学意义(P>0.05)，6 个月后，药物组、手术组患儿 AHI、OAI、RDI、MAI 较治疗前降低，且手术组患儿 AHI 低于药物(P<0.05)，见表 1。

表 1 两组治疗前后的 PSG 检测指标比较($\bar{x}$± s)

Table 1 Comparison of PSG test indexes before and after treatment between the two groups($\bar{x}$± s)

Groups	n	Times	AHI	OAI	RDI	MAI
Drug group	50	Before treatment	18.92± 6.62	10.62± 1.36	9.62± 1.62	15.92± 4.01
		After 6 months	15.03± 1.04*	9.01± 1.31*	6.74± 1.64*	12.22± 3.37*
Operation group	50	Before treatment	18.82± 6.62	10.42± 1.36	9.62± 1.62	15.92± 4.01
		After 6 months	7.03± 1.04*#	8.01± 1.31*	6.24± 1.64*	11.02± 3.37*

Note: Compared with before treatment,*P<0.05; Compared with drug group, #P<0.05.

2.2 两组治疗前后 OSA-18 评分结果

治疗前，两组 OSA-18 评分各指标比较差异无统计学意义(P>0.05)，手术组患儿 6 个月后睡眠障碍、对监护人的影响、身体症状评分较治疗前降低，且低于药物组(P<0.05)，而药物组治疗前后 OSA-18 评分各指标比较差异无统计学意义(P>0.05)，见表 2。

2.3 两组疗效评定情况

手术组患儿总有效率为 90.00%(45/50)，高于药物组的 50.00%(25/50)，差异有统计学意义(P<0.05)，见表 3。

表 2 两组治疗前后的 OSA-18 评分比较($\bar{x}\pm s$,分)

Table 2 Comparison of OSA-18 scores before and after treatment between the two groups($\bar{x}\pm s$, scores)

Groups	n	Times	Sleep disorder	Physical symptoms	Bad mood	Daytime function	Influence on the guardian
Drug group	50	Before treatment	20.15± 8.22	18.97± 9.56	15.86± 7.12	19.14± 8.12	20.83± 8.22
		6 months of treatment	18.83± 7.34	18.01± 6.11	14.21± 6.54	18.23± 9.65	18.80± 9.12
Operation group	50	Before treatment	21.02± 6.62	18.62± 8.36	15.67± 6.62	18.92± 6.01	20.23± 9.21
		6 months of treatment	13.41± 5.04*#	10.51± 7.35*#	14.24± 4.64	17.20± 7.62	14.02± 8.11*#

Note: Compared with before treatment, *P<0.05; Compared with drug group, #P<0.05.

表 3 两组 6 个月后的疗效评定情况[n(%)]

Table 3 Evaluation of curative effect after 6 months between the two groups[n(%)]

Groups	n	Cure	Excellence	Effective	Invalid	Total effective rate
Drug group	50	0(0.00)	11(22.00)	14(28.00)	25(50.00)	25(50.00)*
Operation group	50	15(30.00)	17(34.00)	13(26.00)	5(10.00)	45(90.00)
x^2						19.048
P						0.000

2.4 手术组无效及并发症的原因

手术组患儿术后伤口均有不同程度的疼痛感,短期内出现吞咽困难,术后 24 h 内有出血现象的患儿 3 例,术后 48 h 内有出血现象的 4 例,术后未发生肺不张和鼻咽反流等严重并发症。13 例治疗有效患儿打鼾减少明显,其中伴舌后坠患儿 2 例、上呼吸反复道感染 6 例和鼻炎 5 例;无效的 5 例患儿为伴有肥胖的重度 OSAHS。

3 讨论

OSAHS 为临床儿科中的常见病,是一种潜在致死性呼吸睡眠障碍性疾病,扰乱儿童正常的睡眠通气,影响其生长发育[13-15]。经过多年的临床应用,发现持续正压通气和外科手术在治疗 OSAHS 上存在好的疗效但应用仍受限制,如持续正压通气虽可改善患儿呼吸功能,但受到患儿和家属的依从性影响,依从性差可显著降低疗效[16,17]。外科手术为根治儿 OSAHS 的最常用手段,然而许多研究发现其术后并发症较多,且需密切的术后护理[18]。近年来,为有效提高儿童 OSAHS 治疗有效率,许多学者研究应用孟鲁司特钠(白三烯受体拮抗剂,LTRAs)抗炎治疗,在儿童睡眠呼吸紊乱中取得了较好的效果,且患儿的依从性较好[19,20]。

本研究通过对比药物治疗、手术治疗患儿的临床疗效发现:在 PSG 监测方面,药物组、手术组 6 个月后患儿 AHI、OAI、RDI、MAI 较治疗前降低,提示药物治疗与手术治疗均可改善患儿 PSG 指标,结果与俞晨艺等[21]的研究一致。在 OSA-18 评分方面,手术组患儿术后 6 个月睡眠障碍、对监护人的影响、身体症状评分较治疗前降低(P<0.05),而药物组患儿治疗前后 OSA-18 评分各指标比较差异无统计学意义(P>0.05),提示手术治疗可改善患儿 OSA-18 评分,而药物无明显效果。总有效率分析结果显示手术治疗疗效优于药物治疗。有研究发现,小儿发生 OSAHS 主要机制是免疫力低引起的鼻炎、鼻窦炎等导致上气道淋巴组织增生,当扁桃体等细胞增生速度快于咽腔直径的发育导致上气道狭窄[22,23]。手术治疗恰好可有效解除由扁桃体、腺样体增大导致的呼吸道阻塞,而药物治疗仅能通过药物缓解症状,无法达到完全解除的作用,因此手术治疗在改善 PSG 指标方面更优于药物治疗,但情绪不佳和白天功能治疗前后均无明显改变,小儿白天睡觉、小憩,尤其在 3 岁以内非常常见,属于正常生理需求,所以白天嗜睡很难区别,可能导致了白天功能治疗前后变化不大[24-26]。此外,OSAHS 通过长期缺氧等引起认知功能损害,虽然手术治疗可改善缺氧等症状,从而改善小儿认知功能,但是“情绪不佳”无明显改善,可能与小儿的性格、情绪和术后不良反应有关。虽然手术解决了呼吸道阻塞等问题,但是术后疼痛等的不良反应仍会影响小儿的情绪,且手术也无法改变小儿的性格问题。很多临床分析也发现手术组患儿疗效高于药物组,但是手术组患儿术后有不同程度的并发症,且仍有治疗无效者[27,28]。OSAHS 患儿常伴随鼻部炎症性狭窄等疾患,鼻炎、鼻窦炎等使鼻腔分泌物难以排出,进一步刺激口咽部,增加鼻部的炎症和水肿,促使扁桃体和腺样体组织增生,术后鼻腔仍会有不同程度阻塞。故对于伴鼻炎的患儿,为防止术后仍有 OSAHS,应结合孟鲁司特钠等抗炎药物治疗更佳[29,30]。

综上所述,OSAHS 患儿可行孟鲁司特钠治疗,无明显效果者应选择手术治疗,伴鼻炎患儿可结合抗炎药物治疗。

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