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综合康复治疗对分泌性中耳炎致小儿听力损伤的临床效果*

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摘要 目的:探讨综合康复治疗对分泌性中耳炎致小儿听力损伤的临床效果。**方法:**以 88 例 2016 年 1 月-2017 年 8 月于我院诊治的分泌性中耳炎致听力损伤患儿为研究对象,将其随机分为综合组和对照组,每组 44 例。综合组采用综合康复治疗,对照组采用耳部按摩治疗,观察并比较两组临床疗效,治疗前后气导、骨导听阈的变化。**结果:**治疗后,综合组有效率为 79.55%,显著高于对照组(56.82%, $P<0.05$)。与治疗前相比,两组治疗后 0.25-0.8 Hz 各频率下气导听阈及 2.0 和 4.0 kHz 下骨导听阈均显著降低($P<0.05$),且综合组患儿以上指标均显著低于对照组($P<0.05$)。**结论:**综合康复治疗即联合感音训练、耳部按摩、音乐感知及运动训练对分泌性中耳炎致小儿听力损伤有较好的疗效,能改善患儿气导、骨导听阈水平。

关键词:分泌性中耳炎;小儿听力损伤;综合康复治疗

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Clinical Effect of Comprehensive Rehabilitation Therapy on Children with Secretary Otitis Media-Induced Hearing Damage*

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ABSTRACT Objective: To explore the clinical effect of comprehensive rehabilitation treatment on hearing impairment in children with secretary otitis media. **Methods:** 88 children with hearing loss caused by secretary otitis media diagnosed in our hospital from January 2016 to August 2017 were studied. All children were randomly divided into the comprehensive group and the control group, with 44 cases in each group. The comprehensive treatment group was given comprehensive rehabilitation, the control group was given ear massage. The curative effect, changes of air conduction and bone conduction threshold before and after treatment were observed and compared between two groups. **Results:** The effective rate of combined group (79.55 %) was significantly higher than that of the control group (56.82%, $P<0.05$). Compared with those before treatment, the air conduction threshold at 0.25-0.8 Hz and the bone conduction threshold at 2.0 and 4.0 kHz were significantly decreased after treatment in both groups ($P<0.05$). The above indicators were significantly lower in the comprehensive group than those in the control group ($P<0.05$). **Conclusions:** Comprehensive rehabilitation therapy, that is, joint sensory training, ear massage, music perception and exercise training, had a good effect on children with hearing loss caused by secretary otitis media, and could improve the children's air conduction and bone conduction threshold levels.

Key words: Secretary otitis media; Pediatric hearing loss; Comprehensive rehabilitation

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前言

分泌性中耳炎又叫非化脓性中耳炎、黏液性中耳炎、浆液性中耳炎、卡他性中耳炎等,是一种中耳非化脓性炎性疾病^[1,2]。造成分泌性中耳炎的一个重要原因是咽鼓管阻塞,咽鼓管沟通了中耳与外界环境,正常鼓膜者中耳内、外的气压相当,当各种原因导致咽鼓管出现通气功能障碍时,黏膜会吸收中耳的气体造成中耳出现负压,导致中耳黏膜的静脉扩张、通透性增加,漏出的血清形成中耳积液^[3-5]。分泌性中耳炎的临床症状主要是中耳积液及听力下降,多发于儿童,儿童对于不明显的耳痛主诉不清,当影响患儿听力明显时家长才发现送诊,常造成诊断和治疗的延误^[6,7]。分泌性中耳炎会造成患儿的听力损失、障碍,严

重影响儿童的语言、听力发育,应高度警惕、及早治疗^[8,9]。听力损伤患儿的听觉言语发展主要与早期干预时间、干预年龄及助听效果等有关。本研究采用综合康复治疗方案对患儿分泌性中耳炎致听力损伤进行治疗,效果较好,现报道如下。

1 材料与方法

1.1 一般资料

选取 88 例 2016 年 1 月-2017 年 8 月于我院诊治的分泌性中耳炎致听力损伤患儿为研究对象,将其随机分为综合组和对照组,每组 44 例。综合组中,男 22 例,女 22 例,年龄 1-3 岁,平均 1.7 ± 0.5 岁。对照组中,男 21 例,女 23 例,年龄 1-3 岁,平均 1.7 ± 0.6 岁。两组患儿一般资料比较差异无统计学意义($P<0.05$)。

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纳入标准:①患儿听力损伤为分泌性中耳炎引起;②治疗前患儿语言未形成;③患儿智力水平正常;④患儿家长知情同意。排除标准:①治疗前接收过其他听力康复训练者;②有遗传代谢疾病患儿;③有家族遗传性耳聋史患儿;④其他类型耳聋患儿。

1.2 研究方法

综合组采用综合康复治疗,由感音训练、耳部按摩、音乐感知及运动训练四部分组成。①感音训练:以不同频率及强度的声音对患儿进行一对一感音刺激训练,30 min/次,1次/d,以20日为一个疗程。②耳部按摩:对耳测耳门穴、翳风穴、听宫穴及听会穴等以指腹进行轻柔的按摩,各穴位均5 min,1次/d,以20日为一个疗程。③音乐感知:采用身体感知音乐法,将16~150 Hz低频新高转换为振动,通过刺激骨传导激活大脑中枢,30 min/次,1次/d,以20日为一个疗程。④运动训练:对患儿给予肢体运动功能训练,30 min/次,1次/d,以20日为一个疗程。上述五个部分同时进行,各疗程间隔7 d,共治疗3个疗程。

对照组采用耳部按摩治疗,方法同综合治疗组,各疗程间隔7 d,共治疗3个疗程。

1.3 观察指标

①疗效评价:痊愈表示患儿各波潜伏期及听阈正常;显效表示患儿各波潜伏期有一定程度缩短,较正常长3 s及以上,患儿听阈下降大于30 dB peSPL;有效表示患儿听阈下降15~30 dB peSPL;无效表示听阈下降小于15 dB peSPL,各波潜伏期无变化。有效率=(痊愈数+显效+有效)/总例数100%。

②气导和骨导听阈检测:采用临床听力计(MadsenOB922型),TDH-39型测听耳机对0.125-8 Hz频率进行检测,隔声室环境噪音小于30 dB。根据GB7583-87低于各患儿双耳0.25-8.0 Hz的气导和0.5~4.0 kHz的骨导听阈进行检测。

1.4 统计学分析

用SPSS 20.0软件对数据进行分析,计量资料以($\bar{x} \pm s$)表示,组间比较采用t检验,计数资料以%表示,组间比较采用 χ^2 检验,以 $P < 0.05$ 表示差异具有统计学意义。

2 结果

2.1 两组疗效的比较

治疗后,综合组临床总有效率为79.55%,显著高于对照组(56.82%, $P < 0.05$)。见表1。

表1 两组患儿疗效比较

Table 1 Comparison of clinical efficacy between two groups

Group	Cases	Recovery	Excellent	Effective	Ineffective	Effective rate (%)
Comprehensive group	44	11	11	13	9	35(79.55)*
Control group	44	5	10	10	19	25(56.82)

Note: compared with control group, * $P < 0.05$.

2.2 两组治疗前后气导听阈值的比较

与治疗前相比,两组0.25-0.8 Hz各频率下气导听阈值均显

著降低($P < 0.05$);与对照组相比,综合组患儿0.25、0.5、1.0、2.0、8.0 Hz频率下气导听阈值显著降低($P < 0.05$)。见表2。

表2 两组治疗前后气导听阈值的比较($\bar{x} \pm s$)

Table 2 Comparison of the air conduction hearing thresholds between two groups before and after treatment($\bar{x} \pm s$)

Frequency/Hz	Comprehensive group/dB HL(n=44)		Control group/dB HL(n=44)	
	Before treatment	After treatment	Before treatment	After treatment
0.25	50.25 $\pm$ 14.56	41.22 $\pm$ 11.35**	50.75 $\pm$ 10.24	46.33 $\pm$ 10.54*
0.5	44.35 $\pm$ 10.57	35.33 $\pm$ 11.38**	45.23 $\pm$ 10.45	40.03 $\pm$ 10.54*
1.0	37.02 $\pm$ 11.65	30.21 $\pm$ 9.38**	38.24 $\pm$ 9.85	34.25 $\pm$ 8.77*
2.0	33.56 $\pm$ 8.25	26.31 $\pm$ 7.85**	34.57 $\pm$ 8.95	30.58 $\pm$ 8.32*
4.0	36.26 $\pm$ 10.64	26.34 $\pm$ 7.65*	36.89 $\pm$ 10.33	32.21 $\pm$ 9.76*
8.0	41.65 $\pm$ 10.56	30.04 $\pm$ 8.94**	40.89 $\pm$ 11.33	34.98 $\pm$ 11.02*
PTA	37.01 $\pm$ 10.95	30.12 $\pm$ 9.25**	37.89 $\pm$ 11.05	34.18 $\pm$ 9.46*

Note: compared with before treatment, * $P < 0.05$; compared with the control group, ** $P < 0.05$.

2.3 两组治疗前后骨导听阈的比较

治疗前,两组患儿各频率下骨导听阈值均无显著差异($P > 0.05$),治疗后,2.0和4.0 kHz下,两组患儿骨导听阈值显著降低,综合组以上指标更显著低于对照组($P < 0.05$)。见表3。

3 讨论

咽鼓管是鼻咽腔与中耳腔相通的管道,对中耳气压有调节

作用,能够使中耳内外压基本相等,其不通畅、阻塞可引起传导性聋、鼓室积液等病理改变^[10,11],即造成分泌性中耳炎,伴随出现耳闷、听力下降等中耳非化脓性炎症疾病,中耳积液可能是浆液性分泌物或渗出液,亦可为粘液^[12,13]。目前,分泌性中耳炎的发病机理尚未能完全明确,一般认为与咽鼓管功能障碍、感染、免疫反应等有关^[14-16]。其中,一般认为咽鼓管功能障碍是此病的基本病因,在急性中耳炎时抗生素使用不当也会使炎症迁

表 3 两组治疗前后骨导听阈值的比较($\bar{x} \pm s$)Table 3 Comparison of the bone conduction thresholds between two groups before and after treatment($\bar{x} \pm s$)

Frequency/Hz	Comprehensive group/dB HL(n=44)		Control group/dB HL(n=44)	
	Before treatment	After treatment	Before treatment	After treatment
0.5	16.22± 4.01	15.79± 4.35	16.55± 4.68	15.26± 4.01
1.0	14.35± 4.21	13.98± 4.65	13.21± 3.71	13.58± 4.01
2.0	26.55± 7.65	17.58± 3.02* [#]	25.87± 7.46	20.85± 6.84*
4.0	22.68± 6.38	17.24± 5.12* [#]	22.98± 6.25	19.65± 6.01*

Note: compared with before treatment, *P<0.05; compared with control group, [#]P<0.05.

延不愈^[17,18]。小儿免疫系统尚未完全发育成熟,患感冒或其它上呼吸道感染的患儿容易发生分泌性中耳炎^[19,20],另外平卧位喂奶、接触其他患上呼吸道感染的孩子、被动吸烟等因素都可以增加儿童患分泌性中耳炎的风险^[21,22]。

分泌性中耳炎患者常表现出听力下降、耳鸣、耳痛等^[23],通过内镜检查可以看到患者鼓膜充血、浑浊、内陷,有时甚至可见液平面^[24,25]。小儿分泌性中耳炎更会出现反复发作的特点,故手术或药物治疗后需要配合良好的护理,才能够促进其尽快康复^[26,27]。本研究使用的综合康复治疗法主要包括感音训练、耳部按摩、音乐感知及运动训练四部分,结果显示综合组患儿的临床有效率为 79.55 %,显著高于对照组,说明综合康复治疗对分泌性中耳炎致小儿听力损伤的疗效更好。感音训练是听力损伤康复中的重要治疗手段,能激发听神经冲动,促进有关神经递质合成及释放,从而活化听神经突触,使听敏度提高^[28];耳部按摩具有疏调经气、开瘀通窍功效^[29];音乐感知疗法可促进改善神经系统的功能,调节听觉神经传导^[30];运动训练能提高患儿的运动协调性,促进其与外界的沟通交流,从而激发听神经产生冲动^[31]。本研究对综合康复治疗对患儿的气导、骨导听阈值的影响进行观察和分析,结果显示与对照组相比,综合组患儿治疗后 0.25、0.5、1.0、2.0、8.0Hz 频率下气导听阈值及 2.0 和 4.0 kHz 下骨导听阈值均显著降低,表明综合康复治疗能有效改善分泌性中耳炎致听力损伤患儿的气导、骨导听阈水平。

综上所述,综合康复治疗即联合感音训练、耳部按摩、音乐感知及运动训练对分泌性中耳炎致小儿听力损伤有较好的疗效,能改善患儿气导、骨导听阈水平。

参考文献(References)

- [1] Kucur C, Şimşek E, Kuduban O, et al. Prevalence of and risk factors for otitis media with effusion in primary school children: case control study in Erzurum, Turkey [J]. Turkish Journal of Pediatrics, 2015, 57 (3): 230-235
- [2] Kaya S, Tsuprun V, Hızlı Ö, et al. Cochlear changes in serous labyrinthitis associated with silent otitis media: A human temporal bone study[J]. American Journal of Otolaryngology, 2016, 37(2):83-88
- [3] Formánek M, Zelení k K, Komínek P, et al. Diagnosis of extrasophageal reflux in children with chronic otitis media with effusion using Peptest[J]. International Journal of Pediatric Otorhinolaryngology, 2015, 79(5): 677-679
- [4] Ochoa G O, Figuerola M E, Vila C A, et al. Epidemiology of Streptococcus pneumoniae causing acute otitis media among children in Southern Catalonia throughout 2007-2013: Incidence, serotype

distribution and vaccine's effectiveness [J]. International Journal of Pediatric Otorhinolaryngology, 2015, 79(12): 2104-2108

- [5] Usonis V, Jackowska T, Petraitienė S, et al. Incidence of acute otitis media in children below 6 years of age seen in medical practices in five East European countries[J]. BMC Pediatrics, 2016, 16(1): 108
- [6] Norhayati M N, Ho J J, Azman M Y. Influenza vaccines for preventing acute otitis media in infants and children [J]. Cochrane Database of Systematic Reviews, 2015, 3(3): CD010089
- [7] Zanoletti E, Cazzador D, Faccioli C, et al. Intracranial venous sinus thrombosis as a complication of otitis media in children: Critical review of diagnosis and management [J]. International Journal of Pediatric Otorhinolaryngology, 2015, 79(12): 2398-2403
- [8] Gisselsson-Solen M. Acute Otitis Media in Children-Current Treatment and Prevention [J]. Current Infectious Disease Reports, 2015, 17(5): 1-7
- [9] Anu L H, Riste S, Laura L, et al. Children hospitalized due to acute otitis media: how does this condition differ from acute mastoiditis? [J]. International Journal of Pediatric Otorhinolaryngology, 2015, 79 (9): 1429-1435
- [10] Waldron C A, Thomasjones E, Canningsjohn R, et al. Oral steroids for the resolution of otitis media with effusion (OME) in children (OSTRICH): study protocol for a randomised controlled trial [J]. Trials, 2016, 17(1): 115
- [11] Ovnat T S, Roth Y, Goldfarb A, et al. Severity of Pneumococcal vs. Non-Pneumococcal Acute Otitis Media in Children [J]. Clinical Otolaryngology, 2015, 40(4): 370-377
- [12] Miljanović O, Cikota-Aleksić B, Likić D, et al. Association of cytokine gene polymorphisms and risk factors with otitis media proneness in children [J]. European Journal of Pediatrics, 2016, 175 (6): 809-815
- [13] Kostić M, Ribarić J K, Trotić R, et al. Clinical and audiological findings in children with acute otitis media [J]. Acta otolaryngologica, 2015, 135(7): 1-6
- [14] Ranakusuma R W, Pitoyo Y, Safitri E D, et al. Systemic corticosteroids for acute otitis media in children [J]. Cochrane Database of Systematic Reviews, 2018, 3(7): CD012289
- [15] Kitamura K, Ino Y, Kamide Y, et al. Clinical Practice Guidelines for the diagnosis and management of acute otitis media (AOM) in children in Japan-2013 update [J]. Auris Nasus Larynx, 2015, 42(2): 99-106
- [16] Zielnik J B, Bielicka A. Antibiotic resistance of Streptococcus pneumoniae, in children with acute otitis media treatment failure[J].

- International Journal of Pediatric Otorhinolaryngology, 2015, 79(12): 2129-2133
- [17] Jervisbardy J, Rogers G B, Morris P S, et al. The microbiome of otitis media with effusion in Indigenous Australian children[J]. International Journal of Pediatric Otorhinolaryngology, 2015, 79(9): 1548-1555
- [18] Martines F, Salvago P, Ferrara S, et al. Factors influencing the development of otitis media among Sicilian children affected by upper respiratory tract infections [J]. Brazilian Journal of Otorhinolaryngology, 2016, 82(2): 215-222
- [19] Eliçora S S, Öztürk M, Sevinç R, et al. Risk factors for otitis media effusion in children who have adenoid hypertrophy [J]. International Journal of Pediatric Otorhinolaryngology, 2015, 79(3): 374-377
- [20] Sakulchit T, Goldman R D. Antibiotic therapy for children with acute otitis media[J]. Canadian Family Physician, 2017, 63(9): 685-687
- [21] Pau B C, Ng D K. Prevalence of otitis media with effusion in children with allergic rhinitis, a cross sectional study [J]. International Journal of Pediatric Otorhinolaryngology, 2016, 84(38): 156-160
- [22] Waldron C A, Thomasjones E, Harris D, et al. Recruitment to oral steroids for the resolution of otitis media with effusion in children (OSTRICH) study: challenges of a randomised controlled trial in secondary care sites across Wales and England [J]. Trials, 2015, 16 (S2): P119
- [23] Djordjević V, Bukurov B, Arsović N, et al. Long term complications of ventilation tube insertion in children with otitis media with effusion[J]. Vojnosanitetski Pregled, 2015, 72(1): 40-43
- [24] Ngo C C, Massa H M, Thornton R B, et al. Predominant Bacteria Detected from the Middle Ear Fluid of Children Experiencing Otitis Media: A Systematic Review[J]. Plos One, 2016, 11(3): e0150949
- [25] Sang H K, Cha S H, Kim Y I, et al. Age-dependent changes in pattern recognition receptor and cytokine mRNA expression in children with otitis media with effusion [J]. International Journal of Pediatric Otorhinolaryngology, 2015, 79(2): 229-234
- [26] Banigo A, Hunt A, Rourke T, et al. Does the EarPopper (®) device improve hearing outcomes in children with persistent otitis media with effusion? A randomised single-blinded controlled trial [J]. Clinical Otolaryngology, 2016, 41(1): 59-65
- [27] Cai T, Mcpherson B, Li C, et al. Tone perception in Mandarin-speaking school age children with otitis media with effusion[J]. Plos One, 2017, 12(8): e0183394
- [28] Buzatto G P, Tamashiro E, Proencamodena J L, et al. The pathogens profile in children with otitis media with effusion and adenoid hypertrophy[J]. Plos One, 2017, 12(2): e0171049
- [29] Ulloa C, Guevara S, Soley C, et al. In vitro Activity of Cefditoren against Middle Ear Fluid Isolates from Costa Rican Children with Otitis Media[J]. Chemotherapy, 2015, 60(4): 211-218
- [30] Kaur R, Casey J, Pichichero M. Cytokine, chemokine, and Toll-like receptor expression in middle ear fluids of children with acute otitis media[J]. Laryngoscope, 2015, 125(1): E39-E44
- [31] Cilveti R, Olmo M, Pérez-Jove J, et al. Epidemiology of Otitis Media with Spontaneous Perforation of the Tympanic Membrane in Young Children and Association with Bacterial Nasopharyngeal Carriage, Recurrences and Pneumococcal Vaccination in Catalonia, Spain-The Prospective HERMES Study [J]. Plos One, 2017, 12(2): e0170316

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- [12] Shi Y, Au JS, Thongprasert S, et al. A prospective molecular epidemiology study of EGFR mutations in Asian patients with advanced non-small-cell lung cancer of adenocarcinoma histology [J]. Thorac Oncol, 2014, 9(2): 154-162
- [13] Jorge S, Kobayashi SS, Costa DB, et al. Epidermal growth factor receptor (EGFR) mutations in lung cancer: preclinical and clinical data [J]. Brazil J Med Biolog Res, 2014, 47(11): 929-939
- [14] Lindeman NI, Cagle PT, Beasley MB et al. Molecular testing guideline for selection of lung cancer patients for EGFR and ALK tyrosine kinase inhibitors: guideline from the College of American Pathologists, International Association for Molecular Pathology [J]. Thorac Oncol, 2013, 8(10): 823-859
- [15] Zhou J, Zhao J, Sun K et al. Accurate and economical detection of ALK position lung adenocarcinoma with semiquantitative immunohistochemical screening[J]. PLoS One, 2014, 9 (3): e92828
- [16] Galetta D, Catino A, Misino A, et al. Concomitant EGFR mutations/ALK rearrangements: beyond a simple dual target [J]. Transl Lung Cancer Res, 2016, 5(1): 143-144
- [17] Chiari R, Duranti S, Ludovini V, et al. Long-term response to gefitinib and crizotinib in lung adenocarcinoma harboring both epidermal growth factor receptor mutation and EML4-ALK fusion gene[J]. Clin Oncol, 2014, 32(9): 30-32
- [18] Ning Zhao, Shu-yi Zheng, Jin-ji Yang, et al. Lung Adenocarcinoma Harboring Concomitant EGFR Mutation and EML4-ALK Fusion That Benefits From Three Kinds of Tyrosine Kinase Inhibitors: A Case Report and Literature Review [J]. Clin Lung Cancer, 2015, 16 (2): e5-9
- [19] Sasaki T, Koivunen J, Ogino A, et al. A novel ALK secondary mutation and EGFR signaling cause resistance to ALK kinase inhibitors[J]. Cancer Res, 2011, 71(18): 6051-6060
- [20] Kim S, Kim TM, Kim DW, et al. Heterogeneity of genetic changes associated with acquired crizotinib resistance in ALK-rearranged lung cancer[J]. Thorac Oncol, 2013, 8(18): 415-422
- [21] Oxnard GR. The cellular origins of drug resistance in cancer [J]. Nat Med, 2016, 22(3): 232-234