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·论著·

脑电反馈治疗儿童注意缺陷多动障碍的对照研究

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【摘要】 **目的** 探讨脑电反馈治疗注意缺陷多动障碍(ADHD)的有效性及特点。**方法** 将符合美国精神障碍诊断与统计手册第 3 版修订本标准的 57 例 ADHD 患儿,按就诊序号的奇偶数分为脑电反馈治疗(反馈组,28 例)和哌甲酯(以下简称利他林)治疗(利他林组,29 例),疗程为 3～4 个月,随访 1～3 个月;采用行为问卷、副作用量表、韦氏智力测查、注意变量检测(TOVA)、定量脑电图等工具于治疗前、中、后及随访时进行疗效评定。**结果** 经过治疗两组行为问卷评分均明显减少($P<0.05$)。其中利他林组减分更多,但停药后分值上升;反馈组为持续减分(治疗前、后及随访时的多动指数,利他林组分别为 16.14±4.64,4.23±1.45,13.52±5.08;反馈组分别为 16.04±6.31,9.26±3.09,8.76±3.79。TOVA 亦有类似改变。利他林组的副作用出现率高(82%),而反馈组未发现明显副反应。随访时反馈组韦氏智测中 C 因子分增加[治疗前为(93.7±13.3)分,随访时为(106.3±14.1)分,$P<0.01$],额区和右侧半球 α 波增多,δ 波减少;利他林组尚无此现象。**结论** 脑电反馈治疗 ADHD 的疗效肯定,与利他林治疗相比,虽起效较慢但作用相对持久,且无副作用,停止治疗后病情继续好转。

【关键词】 轻微脑损伤综合征; 哌醋甲酯; 反馈; 脑电描记术; 儿童

A controlled study on the effectiveness of EEG biofeedback on attention deficit hyperactivity disorder

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【**Abstract**】 **Objective** To explore the effectiveness and the characteristics of EEG biofeedback treatment on attention deficit hyperactivity disorder (ADHD). **Methods** Fifty-seven children with ADHD diagnosed according to the DSM-Ⅲ-R criteria were enrolled in the study. They were randomly assigned to the EEG biofeedback treatment (EEG) group (28 cases) and the Ritalin (MED) treatment group (29 cases). They were evaluated before, during, and after treatment with Conner's behavior rating scale, side-effects scale, Wechsler Intelligence Scale, TOVA, and Quantitative EEG. All the subjects were followed-up in one to three months after treatment. **Results** (1) The score of Conner's Rating Scale decreased significantly in both groups. The MED group showed a relatively more decrease of scores in the behavior scale, but rebounded when the treatment stopped (hyperactivity index score for example: pretreatment 16.14±4.64, post-treatment 4.23±1.45, follow-up 13.52±5.08), while the EEG group showed a continual improvement (hyperactivity index: pretreatment 16.04±6.31, post-treatment 9.26±3.09, follow-up 8.76±3.79). Side effects emerged more frequently (82%) in MED group but none in EEG group. (2) Both groups improved significantly on the Omission and Commission level of TOVA ($P<0.05$), the MED group made a significant improvement on Variability of Response to medicine ($P<0.01$). In follow up, the advantage was replaced and became even worse on Omission compared to pretreatment. The EEG group improved continuously. (3) The EEG group gained a significant increase in score of the Free from Distractibility Factor of Wechsler Intelligence Scale (pretreatment 93.7±13.3, follow-up 106.3±14.1, $P<0.01$). (4) A significant increase of relative power of 8-13 Hz waves and decrease of 0-4 Hz waves was found in EEG group through the Quantitative EEG. No such results were found in MED group. **Conclusion** The effectiveness of EEG biofeedback is affirmed. Compared to the psycho-stimulant-Ritalin, it shows slower but relatively permanent effects, and a special effect on improving of attention and the EEG spectrum.

【**Key words**】 Attention deficit disorder with hyperactivity; Methylphenidate; Feedback; Electroencephalography; Child

以哌甲酯(以下简称利他林)为代表的中枢兴奋剂,是治疗注意缺陷多动障碍(attention deficit hyperactivity disorder, ADHD)的传统经典用药,起效快而明显,但由于作用短暂且副作用大等而使其应

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用受到了限制[1,2]；而脑电反馈治疗是较晚发展起来的一种治疗手段[3-5]，为探讨脑电反馈治疗 ADHD 的疗效，我们以利他林的疗效为金标准，采用脑电反馈治疗方法在 ADHD 患儿的治疗中进行验证，并比较二者的疗效特点。

对象和方法

一、对象

本研究采用对照研究设计。对象为 1998 年 7 月至 1999 年 1 月在本所儿童门诊的 8～13 岁 ADHD 患儿，共 57 例。均符合美国精神障碍诊断与统计手册第 3 版修订本中 ADHD 诊断标准，韦氏智力测查智商(IQ)≥75 分，无严重躯体及神经系统疾病。按就诊次序编号，将 57 例中的奇数者列入利他林治疗组(以下简称利他林组)，共 29 例；偶数者列入脑电反馈治疗组(以下简称反馈组)，共 28 例。两组的年龄、性别差异无显著性($P>0.05$)。两组共有 10 例脱落，其中利他林组 8 例(28%；因用药不足 1 个月)，反馈组 2 例(7%；参加治疗不足 10 次)；利他林组的脱落率高于反馈组。脱落的病例不计入统计。

二、方法

(一)干预方法

1. 脑电反馈治疗：采用 Autogenic A 620 脑电生物反馈系统，以抑制 4～8 Hz 的 θ 波，强化 12～15 Hz 的感觉运动节律波为治疗方案。通过该装置采集患儿的脑电波并以各种图象的方式进行实时反馈。每次治疗包括五段，其中第一段为基础状态检测及训练目标制定段，共 2 min；其余四段为反馈治疗阶段，设为 5～7 min。治疗频率为 1～4 次/周，20 次为 1 个疗程，共 3～4 个月。以治疗少于 20 次者计为脱落[5]。

2. 利他林治疗：初始剂量为 5 mg/d，加至产生满意效果为止(即最大的疗效，能够耐受的副反应)。药物调整期为 1 个月，以后尽量维持用药，节假日停药。维持用药期酌情调整用药剂量。疗程为 3 个月。用药不到 1 个月者计为脱落。

两组均于治疗后随访 1～3 个月，自治疗前至随访时间隔 4～8 个月。

(二)评价工具及方法

1. Conners 儿童行为评定量表：选用 48 项的修订父母问卷，包括行为问题、学习问题、心身问题、冲动-多动、焦虑和多动指数 6 个因子分，分别在治疗前、治疗中(用药 1 个月或反馈治疗 20 次时)、治疗后及随访时进行评定。

2. 副反应量表：采用 Barkley 等[6]于编制的中枢兴奋剂副作用量表，包括常见的 14 种副反应(食欲减退或呕吐、头疼、睡眠不好、头晕、胃疼、困倦、抽动、忧郁、易激惹、发呆、爱哭、兴趣减退、躁狂、焦虑、话少、噩梦)。症状从无至严重分为 9 级评分，治疗时每周评定 1 次，由治疗者向家长询问，以家长主观印象评定。

3. 注意变量检测(Test of Variables of Attention，TOVA)：TOVA 系针对 ADHD 患儿设计的一种认知功能测查软件。其中"遗漏"反映注意缺陷；"错认"反映冲动性；"反应时"反映认知加工速度；"反应时变化"反映注意维持和反应稳定性。分别于治疗前、治疗中及随访时检查 3 次。

4. 韦氏智力测查：采用中国韦氏儿童智力量表(C-WISC)，于治疗前和随访时评定全量表、言语和操作分量表的 IQ 值和言语理解因子(A 因子)、知觉组织因子(B 因子)、注意/不分心因子(C 因子)。

5. 定量脑电图：参照国际 10/20 系统分区，在患儿清醒、安静、闭目状态下采集 16 个导联(Fp_1、Fp_2、F_3、F_4、C_3、C_4、P_3、P_4、O_1、O_2、F_7、F_8、T_3、T_4、T_5、T_6)20 s 脑电波，按 δ、θ、α、β_1、β_2 频段进行分析。于治疗前及随访时检查 2 次，比较两种治疗对患儿脑电的远期影响。

(三)统计处理方法

采用 SPSS 8.0 统计软件进行独立样本 t 检验、配对 t 检验等。

结　果

一、反馈组与利他林组 Conner 儿童行为量表评分比较(表 1)

由表 1 显示，与治疗前比较，治疗中，反馈组在行为、学习及多动指数评分降低呈显著性($P<0.05$)；治疗后及随访时，行为、学习、多动因子及多动指数评分降低呈非常显著性($P<0.01$)；表明反馈组在治疗期间及随访时的评分呈持续下降。利他林组于治疗中及治疗后在行为、学习、多动因子及多动指等数评分低于治疗前($P<0.01$)，学习、多动因子(仅治疗后)及多动指等数评分低于反馈组($P<0.05$)，但在随访时，学习、多动因子及多动指数评分均高于治疗后($P<0.01$)，并高于反馈组($P<0.05$)。

二、反馈组及利他林组治疗副作用的评定

表 1　反馈组及利他林组于治疗前、中、后及随访时 Conner 行为量表评分的比较($\bar{x} \pm s$,分)

组别	例数	行为因子	学习因子	躯体因子	多动因了	焦虑因了	多动指数
反馈							
治疗前	26	7.38 ± 4.42	8.54 ± 1.96	1.62 ± 1.60	6.77 ± 3.34	2.38 ± 1.83	16.04 ± 6.31
治疗中	23	4.70 ± 2.49*	6.83 ± 1.67*	1.04 ± 0.98	5.17 ± 2.66	1.83 ± 1.44	12.09 ± 4.14*
治疗后	23	4.39 ± 2.27**	5.52 ± 2.02**	0.74 ± 0.69	3.91 ± 2.15**	1.22 ± 1.20	9.26 ± 3.09**
治随访	21	4.14 ± 2.06**	5.10 ± 2.07**	1.00 ± 1.22	3.67 ± 2.22**	1.43 ± 1.47	8.76 ± 3.79**
利他林							
治疗前	21	8.29 ± 4.55	7.86 ± 1.65	1.48 ± 1.44	7.62 ± 2.54	2.10 ± 2.77	16.14 ± 4.64
治疗中	21	4.57 ± 3.01**	3.90 ± 1.95**▽	1.19 ± 1.72	3.52 ± 2.42**	1.52 ± 2.11	7.48 ± 4.24**▽
治疗后	14	2.71 ± 1.90**	2.71 ± 0.73**▽	1.07 ± 1.82	2.21 ± 0.80**▽	1.07 ± 1.86	4.43 ± 1.45**▽
随访	21	5.19 ± 3.23*	6.24 ± 2.19*△▽	1.00 ± 1.26	6.24 ± 2.84△▽	1.52 ± 1.86	13.52 ± 5.08△▽

注:经独立样本 t 检验,与治疗前比较,* $P<0.05$,** $P<0.01$;与本组治疗后比较,△ $P<0.01$;与同期反馈组比较,▽ $P<0.05$

表 2　反馈组与利他林组 C-WISC 测验各项因子得分的比较($\bar{x} \pm s$,分)

组别	例数	IQ 值			A 因子	B 因了	C 因子
		全量表	言语分量表	操作分量表			
反馈							
治疗前	15	99.1 ± 12.9	102.5 ± 11.6	95.2 ± 14.6	103.5 ± 13.1	97.6 ± 14.7	93.7 ± 13.3
随访	15	110.6 ± 14.7*	110.7 ± 13.3*	108.6 ± 17.3*	112.1 ± 13.5*	110.1 ± 17.3*	106.3 ± 14.1*
利他林							
治疗前	15	107.9 ± 11.3	111.8 ± 12.8	102.0 ± 11.2	111.9 ± 14.8	105.3 ± 12.3	100.1 ± 8.1
随访	15	119.0 ± 15.9*	119.1 ± 16.4	113.5 ± 15.2*	121.3 ± 17.9	118.4 ± 16.1*	95.5 ± 8.8

注:A 因子:言语理解;B 因子:知觉组织;C 因子:注意/不分心;经配对样本 t 检验,与治疗前比较,* $P<0.01$

利他林副反应的发生率为 82%,且在用药期间一直存在;减少药量后虽可部分缓解但不能消失;因利他林副反应而停药或脱落 6 例(22%)。反馈组未发现类似副作用。

三、反馈组与利他林组 C-WISC 测验比较(表 2)

在两次评定中获得完整结果者共 30 例,每组各 15 例;两组间的年龄、性别差异无显著性。由表 2 显示,与治疗前比较,随访时两组在全量表、言语(利他林组言语分量表的提高未达显著性)和操作分量表 IQ 值均有提高;反馈组的 A,B,C 因子分也有提高($P<0.01$),而利他林组仅 B 因子分提高。

表 3　反馈组与利他林组 TOVA 操作结果的比较($\bar{x} \pm s$)

组别	例数	遗漏 (M,个)	错认 (M,个)	反应时 (ms)	反应时变化 (ms)
反馈					
治疗前	25	3.0	14	505.9 ± 116.0	171.7 ± 12.2
治疗中	17	1.0	6**	503.3 ± 141.8	163.1 ± 68.2
随访	19	1.0*	3**	514.5 ± 104.3	151.8 ± 57.8**
利他林					
治疗前	21	3.5	13	518.0 ± 90.9	181.3 ± 40.2
治疗中	16	1.0*	5**	491.9 ± 101.7	133.9 ± 37.4**
随访	19	3.0	9**	501.5 ± 75.8	164.7 ± 53.4

注:M 为中位数;经独立样本 t 检验,与治疗前相比,** $P<0.01$,* $P<0.05$

四、反馈组与利他林组 TOVA 操作结果比较(表 3)

反馈组 TOVA 操作指标的下降较慢,治疗中仅错认一项差异有显著性,而在随访时继续下降,遗漏、错认和反应时变化的评分均较治疗前降低($P<0.05$ 和 $P<0.01$)。与治疗前比较,利他林组在服药期间的 TOVA 操作评分均有下降,其中以遗漏、错认、反应时变化为著($P<0.05$ 和 $P<0.01$);但在随访时仅错认一项优于治疗前($P<0.01$),余均有不同程度的升高。

五、反馈组与利他林组定量脑电检查结果比较

于治疗前和随访时获得两次完整数据者共 28 例。其中利他林组 13 例,反馈组 15 例。与治疗前比较,随访时反馈组在前额区、右顶叶和右前颞的 δ 波(0.75 ~ 3.75 Hz)相对功率明显减少($P<0.05$);额区、右前颞和后颞的 α 波(8.00 ~ 12.75 Hz)相对功率明显增加($P<0.01$ 和 $P<0.05$);而利他林组无此变化。

讨　论

本研究通过与利他林治疗的比较,从临床症状、神经心理、神经生理等方面验证了脑电反馈治疗的

有效性。Conner 量表和 TOVA 检查结果均显示，在治疗干预后，利他林组和反馈组的临床症状及认知功能都有显著改善。组间比较，利他林组起效更快，改善幅度更大，与脑电反馈相比存在一定的优势，但在停药后，大多数患儿出现反复；而脑电反馈组则呈持续好转，于随访时已显出绝对优势。两组副作用评定，利他林组副作用的出现率高(82%)，造成早期断药者多(为 22%)；而脑电反馈则没有这类问题。提示脑电反馈治疗对 ADHD 患儿临床症状的改善确实有效，虽起效较慢，但其作用相对持久且没有类似利他林治疗的副作用，对临床治疗有一定的可取性。

国内外的研究提示，韦氏智力测查的 C 因子可反映 ADHD 患儿认知缺陷的一些特点[7,8]，被命名为注意/不分心因子。本研究显示，与利他林组比较，脑电反馈组 C 因子分值的大幅度提升具有独特性；此前 Cartozzo 用假治疗组做对照也得出类似结果[6]。由此推论脑电反馈对 ADHD 的注意缺陷有着较为独特的作用。

Lubar 等[9]发现，经脑电反馈治疗后，患儿 θ、β 波的功率较前降低，遗憾的是没有进行对照。在本研究中，以脑电反馈组与利他林组进行比较显示，反馈组治疗后 δ 波的相对功率减少，α 波的相对功率增多，变化集中在额区和右半球，而利他林组无类似的改变，说明脑电反馈治疗对脑电改变影响的独特性。

综上所述，脑电反馈治疗 ADHD 疗效肯定，与利他林相比疗效相对持久，且无副作用，对患儿的注意缺陷和脑电图谱有独特的影响；但它起效较慢，费用高，家长和患儿都须花费很多时间。考虑到 ADHD 患儿往往存在其他的情绪行为问题及问题行为的应对问题，故对 ADHD 患儿的治疗，以脑电反馈与药物治疗，以及社会心理干预措施的综合治疗方案可能有更好的收益。

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脑电反馈治疗儿童注意缺陷多动障碍的对照研究

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相似文献(10条)

1. 期刊论文 郝学儒. 崔文波. Hao Xue-ru. Cui Wen-bo 奥氮平与哌醋甲酯治疗儿童多动症效果对照 -中国临床康复 2005,9(48)

背景:注意缺陷或多动障碍通常采用精神兴奋类药物治疗,此类药物已经显示对大多数儿童的认知和行为障碍起改善作用.目的:比较奥氮平与哌醋甲酯治疗儿童多动症的临床疗效及不良反应.设计:病例对比观察.单位:北京回龙观医院精神科和山东省牟平县人民医院心理精神科.对象:选择2002-03/2004-04在北京回龙观医院精神科门诊和山东牟平人民医院心理精神科门诊或病房就诊的儿童多动症患儿60例,监护人均知情同意.随机分为2组,奥氮平组及哌醋甲酯组各30例.方法:奥氮平组患儿给予奥氮平2.5～7.5 mg/d,晚上1次顿服;哌醋甲酯组给予哌醋甲酯5～15 mg/d,分早、午2次口服.两组疗程均为12周.两组患儿于治疗前及治疗第12周末用Conners氏教师用量表(①多动指数项目分10个条目.②多动行为因子项目包括7个条目.每项表现为"无、稍有、相当多、很多"计为0,1,2,3分)、治疗副反应量表(分为行为毒性、化验异常、神经系统、植物神经系统、心血管系统及皮肤症状等.0无,1可疑或极轻,2轻度,3中度,4重度.最高分为22,最低为0,超过2分为阳性)进行多动症状及副反应评估.主要观察指标:两组患儿治疗第12周末多动症状评分及副反应评分.结果:60例患儿全部进入结果分析,无脱落.①两组患儿治疗第12周末多动症状评分比较:治疗12周后,奥氮平组及哌醋甲酯组患儿的多动指数总分及多动行为因子总分均较治疗前显著降低
[12.4±2.8,15.1±9.2,13.7±3.4,20.8±10.3:26.6±3.9,43.5±11.7,25.5±4.8,41.6±5.9(t=8.16～15.26,P<0.05～0.01)];且奥氮平组的多动行为因子总分显著低于哌醋甲酯组(t=2.69,P<0.05).②两组患儿治疗第12周末的副反应评分比较:奥氮平组、哌醋甲酯组患儿的副反应评分分别为10.3±4.5,10.9±3.8,差异无显著性意义(P>0.05).结论:奥氮平及哌醋甲酯均能显著改善多动症患儿的多动症状和注意缺陷,但奥氮平对行为障碍的总体改善程度要优于哌醋甲酯.

2. 期刊论文 钱秋谨. 王玉凤. 杜亚松. 郑毅. 王民洁. 姚晨. 杨莉. 程嘉. 巫雪莹 盐酸哌甲酯控释片治疗注意缺陷多动障碍的多中心、随机、双盲、交叉对照研究 -中华精神科杂志2005,38(2)

目的比较盐酸哌甲酯控释片与安慰剂治疗儿童注意缺陷多动障碍(ADHD)的疗效及安全性.方法采用多中心、随机、双盲交叉对照试验设计.将121例符合美国精神障碍诊断与统计手册第4版注意缺陷多动障碍诊断标准的患儿依照1： 1的比例,随机分为A(先服哌甲酯控释片再服安慰剂)或B(先服安慰剂再服哌甲酯控释片)两个治疗顺序组,分别接受哌甲酯控释片和安慰剂治疗各7 d;并于双盲治疗期末评定主要疗效评定指标[由教师评定的Conners注意缺陷

/多动伴攻击行为评定量表(IOWA Conners量表)注意缺陷/多动(I/O)分项]、次要疗效指标[包括教师评定的对立/违抗(O/D)分项、同伴交往和总体评价量表;家长评定的IOWA Conners量表I/O和O/D分项、家庭活动状况和总体评价量表;研究者评定的临床总体印象量表].结果 (1)疗效:哌甲酯控释片治疗7 d后,意向性分析人群和符合方案评估人群的主要疗效指标分析的评分分别为(4.92±3.11)分和(4.80±3.07)分,低于安慰剂组[分别为(6.70±3.67)分和(6.58±3.70)分;均P<0.01];其他次要疗效指标,哌甲酯控释片治疗组的评定结果均明显优于安慰剂治疗组(P<0.01).(2)不良事件发生率:哌甲酯控释片组为14.9%,安慰剂组为7.4%,两组差异无统计学意义(P>0.05).结论 哌甲酯控释片用于ADHD的临床疗效优于安慰剂,且治疗安全.

3.外文期刊 Bokhari F.Mayes R.Scheffler RM An analysis of the significant variation in psychostimulant use across the U.S.

OBJECTIVE: To provide a national profile of the area variation in per-capita psychostimulant consumption in the U.S. METHODS: We separated 3030 U.S. counties into two categories of 'low' and 'high' per-capita use of attention deficit hyperactivity disorder (ADHD) drugs (based on data from the Drug Enforcement Administration), and then analyzed them on the basis of their socio-demographic, economic, educational and medical characteristics. RESULTS: We found significant differences and similarities in the profile of counties in the U.S. that are above and below the national median rate of per-capita psychostimulant use (defined as g/per 100K population). Compared to counties below the median level, counties above the median level have: significantly greater population, higher per-capita income, lower unemployment rates, greater HMO penetration, more physicians per capita, a higher ratio of young-to-old physicians and a slightly higher students-to-teacher ratio. CONCLUSIONS: Our analysis of the DEA's ARCOS data shows that most of the significant variables correlated with 'higher' per-capita use of ADHD drugs serve as a proxy for county affluence. To provide a more complex, multivariate analysis of the area variation in psychostimulant use across the U.S.-which is the logical next step-requires obtaining price data to match the DEA's quantity data.

4.外文期刊 Vaidya.CJ.Austin.G.Kirkorian.G.Ridlehuber.HW.Desmond.JE.Glover.GH.Gabrieli.JD Selective effects of methylphenidate in attention deficit hyperactivity disorder: a functional magnetic resonance study.

Functional MRI revealed differences between children with Attention Deficit Hyperactivity Disorder (ADHD) and healthy controls in their frontal-striatal function and its modulation by methylphenidate during response inhibition. Children performed two go/no-go tasks with and without drug. ADHD children had impaired inhibitory control on both tasks. Off-drug frontal-striatal activation during response inhibition differed between ADHD and healthy children: ADHD children had greater frontal activation on one task and reduced striatal activation on the other task. Drug effects differed between ADHD and healthy children: The drug improved response inhibition in both groups on one task and only in ADHD children on the other task. The drug modulated brain activation during response inhibition on only one task: It increased frontal activation to an equal extent in both groups. In contrast, it increased striatal activation in ADHD children but reduced it in healthy children. These results suggest that ADHD is characterized by atypical frontal-striatal function and that methylphenidate affects striatal activation differently in ADHD than in healthy children.

5.外文期刊 Carpentier PJ.de Jong CA.Dijkstra BA.Verbrugge CA.Krabbe PF A controlled trial of methylphenidate in adults with attention deficit/hyperactivity disorder and substance use disorders.

AIMS: Attention deficit/hyperactivity disorder (ADHD) is common among adult patients with substance use disorders. The benefits of treating ADHD in these patients are uncertain and the prescription of psychostimulants is disputed, because of the risk of abuse. This study examined the short-term effectiveness of methylphenidate treatment for ADHD in adults with substance use disorders. DESIGN: Double-blind, placebo-controlled, multiple cross-over (A-B-A-B design) comparative trial of methylphenidate versus placebo. SETTING: In-patient addiction treatment facility. PARTICIPANTS: Twenty-five patients with ADHD who were receiving in-patient treatment for various substance use disorders. INTERVENTION: During the course of 8 weeks, each participant completed two phases of placebo and two phases of active medication treatment, in a fixed low-dosage schedule (up to 0.6 mg/kg/day). Abstinence was maintained during the study. MEASUREMENTS: The outcome measure was ADHD symptomatology, as measured with the ADHD rating scale-IV. The results were compared using MANOVA repeated measures. FINDINGS: Nineteen of the 25 patients completed the trial. A significant reduction in ADHD symptoms was observed in the first week in both conditions. The positive response to active treatment (nine patients; 36%) was not significantly higher than that to placebo (five patients; 20%). CONCLUSIONS: In this small pilot study, the effect of low-dose methylphenidate in adult ADHD patients with concomitant substance use disorders is limited. ADHD symptoms in adults were susceptible to a distinct short-term placebo response.

6.外文期刊 Gadow.KD.Sverd.J.Sprafkin.J.Nolan.EE.Grossman.S Long-term methylphenidate therapy in children with comorbid attention-deficit hyperactivity disorder and chronic multiple tic disorder (see comments)

BACKGROUND: This study examined changes in attention-deficit hyperactivity (ADHD) behaviors and motor and vocal tics during long-term treatment with methylphenidate. METHODS: Thirty-four prepubertal children with ADHD and chronic multiple tic disorder (who had participated in an 8-week, double-blind, placebo-controlled methylphenidate evaluation) were evaluated at 6-month intervals for 2 years as part of a prospective, nonblind, follow-up study. Treatment effects were assessed using direct observations of child behavior in a simulated (clinic-based) classroom and behavior rating scales completed by parents and physician. Videotapes of the simulated classroom were scored by coders who were blind to treatment status. RESULTS: There was no evidence (group data) that motor tics or vocal tics changed in frequency or severity during maintenance therapy compared with diagnostic or initial double-blind placebo evaluations. Behavioral improvements demonstrated during the acute drug trial were maintained during follow-up. There was no evidence (group data) of clinically significant adverse drug effects on cardiovascular function or growth at the end of 2 years of treatment. CONCLUSIONS: Long-term treatment with methylphenidate seems to be safe and effective for the management of ADHD behaviors in many (but not necessarily all) children with mild to moderate tic disorder. Nevertheless, careful clinical monitoring is mandatory to rule out the possibility of drug-induced tic exacerbation in individual patients.

7.外文期刊 Castellanos.FX Stimulants and tic disorders: from dogma to data (comment)

8.外文期刊 Carey.WB.Diller.LH Concerns about Ritalin.

9.外文期刊 Lu.CK.Kuang.TM.Chou.JC Methylphenidate (Ritalin)-associated cataract and glaucoma.

Methylphenidate hydrochloride (Ritalin) is the drug of choice for attention deficit hyperactivity disorder (ADHD). However, an association of Ritalin with glaucoma has been reported. We report a case of Ritalin-associated cataract and glaucoma. A 10-year-old

boy was diagnosed with ADHD and had received methylphenidate hydrochloride, 60 mg/day for 2 years. He presented with blurred vision. Best-corrected visual acuity was 6/60 in both eyes. Ocular examinations revealed intraocular pressure (IOP) of 30 mmHg under medication, dense posterior subcapsular opacity of lens, pale disc with advanced cupping, and marked constriction of visual field. Despite maximal anti-glaucomatous medication, IOP still could not be controlled. The patient then received combined cataract and glaucoma surgery. Visual acuity improved and IOP was within normal limits in both eyes postoperatively. Large dose of methylphenidate may cause cataract and glaucoma. The mechanism remains unclear. Doctors should be aware of the possible ocular side effects of methylphenidate.

10.外文期刊 Kehoe.WA Treatment of attention deficit hyperactivity disorder in children.

These are controversial times for those who care for children with attention deficit hyperactivity disorder (ADHD). Class action law suits have been filed in federal courts in California and New Jersey accusing a manufacturer of methylphenidate and the American Psychiatric Association of conspiring to expand the use of this drug. These suits have recently been dismissed. This is just the latest chapter in the long-running debate over the existence, diagnosis, and treatment of ADHD. Controversies relating to ADHD continue to polarize physicians, educators, caregivers, and parents of these children. There are those who believe that ADHD does not exist as a true disorder. At the other end of the spectrum are those who are too quick to make the diagnosis without an adequate patient workup. Parents can unfortunately get caught in the middle of this debate when making treatment decisions for their children.

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