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阿托品联合综合疗法治疗青少年屈光不正的疗效及安全性分析

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摘要 目的：分析阿托品联合综合疗法治疗青少年屈光不正弱视的近期疗效及安全性。**方法：**以 2017 年 2 月至 2017 年 5 月于我院接受诊治的 60 例青少年屈光不正弱视患者(患眼 102 只)为研究对象，按接受诊治时间先后顺序分为对照组和观察组各 30 例。患眼分别为 52 和 50 只。观察治疗前后所有屈光不正弱视患者的视觉敏感度、图像诱发电位(P-VEP)、立体视功能的改善、治疗有效率和不良反应的发生情况。**结果：**治疗后，两组患眼对比度、波幅均较治疗前显著升高(P＜0.05)，潜伏期低于治疗前(P＜0.05)，且观察组各空间频率下的对比度、波幅均显著高于对照组(P＜0.05)，潜伏期低于对照组(P＜0.05)；观察组患眼的矫正幅度范围和矫正分开范围显著高于对照组，矫正近立体视锐角显著低于对照组 (P＜0.05)；观察组的治疗总有效率为 92.00%，高于对照组的 71.15%(P＜0.05)；两组患者均未见明显的不良反应发生。**结论：**阿托品联合综合疗法对青少年屈光不正弱视的近期疗效较好，且安全性高。

关键词：屈光不正弱视；阿托品；综合疗法；近期疗效；安全性

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Analysis of the Curative Effect and Safety of Atropine Combined with Comprehensive Therapy in the Treatment of Adolescent Refractive and Amblyopia

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ABSTRACT Objective: To analyze the recent curative effect and safety of atropine combined with comprehensive therapy in the treatment of adolescent refractive and amblyopia. **Methods:** Adolescent with refractive and amblyopia (60 cases, 102 sick eyes) treated in our hospital from February 2017 to May 2017 were selected as the research objects and randomly divided into the control group (30 cases, 52 sick eyes) and the observation group (30 cases, 50 sick eyes) according to treatment time sequence. The improvement of visual sensitivity, pattern visual evoked potential (P-VEP), stereoscopic vision, effective rate and incidence adverse reaction were compared between two groups. **Results:** After treatment, the contrast ratio at different spatial frequency, amplitude of both groups after treatment were significantly higher than those before treatment (P＜0.05); while the latentperiod were lower than those before treatment. The contrast ratio at different spatial frequency, amplitude of observation group were higher than those of the control group (P＜0.05); the latent period was lower than that of the control group (P＜0.05); After treatment, the positive range and range of correction of observation group were higher than those of the control group (P＜0.05), and correction of close stereo vision acute angle was lower than that of control group (P＜0.05). The total efficiency rate of observation group (92.00%) was higher than that of control group (71.15%) (P＜0.05). No obvious adverse reactions was found in both groups. **Conclusion:** Atropine combined with comprehensive therapy is effective in the treatment of adolescent refractive and amblyopia with no obvious adverse reactions.

Key words: Refractive and amblyopia; Atropine; Comprehensive therapy; Recent curative effect; Safety

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前言

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弱视是儿童及青少年时期的常见眼科疾病[1]，通常会使患者无完善的立体视功能，不同程度地影响着患者的择业和生活[2]。在儿童时期，给予屈光不正弱视患者及时的综合治疗可取得显著效果[3]，但随着年龄的不断增大以及病情的加重，综合疗法的效果则不太理想[4]。此外，综合疗法疗程长，见效慢，部分患者依从性较差，往往会耽误青少年患者接受有效的治疗[5,6]。近年

来,通过药物干预联合综合治疗等其它方法提高临床疗效已成为研究热点[7,8]。阿托品疗法的治疗依从性较好,有利于提高视力,建立高级视功能[9,10]。因此,本研究探讨了阿托品联合综合疗法治疗青少年屈光不正弱视的近期疗效,并且分析了治疗的安全性,具体报道如下。

1 资料与方法

1.1 一般资料

以 2017 年 2 月至 2017 年 5 月于我院接受诊治的 60 例青少年屈光不正弱视患者(患眼 102 只)为研究对象。纳入标准:① 符合屈光不正弱视的诊断标准;② 性别不限,年龄 8~25 岁;③ 矫正视力相差 2 行;④ 中心性注视。排除标准:① 合并其它类型的弱视者;② 眼球震颤或眼底病变者;③ 合并心、肝、肾等全身性系统疾病;④ 眼部急性炎症、圆锥角膜、干眼症和糖尿病等的阿托品或角膜塑形治疗禁忌症;⑤ 合并神经系统性疾病;⑥ 不能配合完成治疗者。研究经家长签署知情同意书并获本院医学伦理委员会批准。按接受诊治时间先后顺序分为对照组和观察组各 30 例。对照组,男 17 例(患眼 29 只),女 13 例(患眼 23 只),年龄 6~19 岁,平均(11.2± 3.1)岁,病程 1~6 年,平均(3.8± 1.2)年;观察组,男 16 例(患眼 27 只),女 14 例(患眼 23 只),年龄 7~20 岁,平均(10.9± 3.8)岁,病程 1~7 年,平均(4.3± 1.5)年。两组患者一般资料比较差异均无统计学意义(P>0.05),具有可比性。

1.2 治疗方法

对所有屈光不正弱视患者均进行眼科常规检查,以综合疗法治疗:全日佩戴合适的眼镜,对于近视及远视屈光不正患者均附加 CAM 视觉刺激仪进行视觉刺激,远视屈光不正患者还可附加穿针或穿珠子等精细目力训练。在此基础上,给予观察组硫酸阿托品滴眼液治疗:晚睡前将 0.04%硫酸阿托品滴眼液摇匀后滴双眼,滴药后压迫泪囊区 5 min,1 次 / 晚,连续治疗 3 个月。禁食辛辣、刺激等食物,严密观察治疗期间患者的呼吸、心率、血压、尿量等状况。所有患者定期复诊,若复诊时发现有外隐斜及融合功能不足者,应立即终止试验。

1.3 观察指标

观察两组患眼的视觉敏感度、图像诱发电位(P-VEP),立体视功能改善以及治疗有效率和不良反应情况。① 视觉敏感度:用 MFVA-100 型视功能测试仪进行测定,检测不同频率下患眼的对比度、立体视功能(矫正分开范围和矫正近立体视锐角等)。② P-VEP:用 APS 型多功能检查仪进行测定,刺激参数设置为黑白棋盘翻转刺激模式, 频率 2.00 Hz, 放大 20000 倍, 数目 100,对比度 100%。③ 疗效:据 1996 年中华眼科学会全国儿童弱视斜视防治学组会议制订的标准[b]:基本痊愈:矫正视力≥ 0.9;进步:视力提高≥ 2 行;无效:视力提高≤ 1 行,或趋于严重。有效率 =[(基本痊愈眼数 + 进步眼数)/ 总眼数]× 100%。④ 对所有患者进行随访及复查,记录不良反应的发生情况。

1.4 统计学分析

以 SPSS 18.0 分析数据,计量资料以 $\bar{x}\pm s$ 表示,计数资料以%表示,进行 t 检验或卡方检验,以 P<0.05 为差异具有统计学意义。

2 结果

2.1 两组患者治疗前后的视觉敏感度比较

治疗前,两组各空间频率下患眼对比度进行比较差异均无统计学意义(P>0.05);经治疗后,两组患眼对比度均较治疗前显著升高(P<0.05),且观察组各空间频率下的对比度均高于对照组(P<0.05),见表 1。

表 1 两组治疗前后的视觉敏感度比较($\bar{x}\pm s$,n=30)

Table 1 Comparison of the visual sensitivity between two groups before and after treatment ($\bar{x}\pm s$, n=30)

Groups	Eyes number	Period	Spatial frequency			
			100%	75%	50%	25%
Control group	52	Prior treatment	1.14± 0.25	1.02± 0.21	0.79± 0.20	0.68± 0.17
		Posttreatment	1.31± 0.28	1.17± 0.24	0.90± 0.24	0.77± 0.21
Observation group	50	Prior treatment	1.16± 0.24	1.05± 0.19	0.81± 0.22	0.65± 0.18
		Posttreatment	1.49± 0.32	1.29± 0.28	1.06± 0.23	0.85± 0.24
P1/P2/P3/P4			0.939/0.042/0.022/0.020	0.936/0.048/0.025/0.046	0.952/0.047/0.039/0.028	0.804/0.042/0.045/0.046

Note: 1 compared with the control group before treatment; 2 compared with the control group after treatment; 3 compared with the control group before and after treatment; 4 compared with theobservationgroup before and after treatment.

2.2 两组治疗前后的 P-VEP 比较

治疗前,两组的波幅和潜伏期比较差异无统计学意义(P>0.05);治疗后,两组波幅均显著高于治疗前,潜伏期均明显低于治疗前(P<0.05),且观察组的波幅高于对照组,潜伏期低于对照组(P<0.05),见表 2。

2.3 两组患眼治疗后立体视功能的改善情况比较

治疗后,与对照组相比,观察组患眼的矫正幅度范围和矫正分开范围显著升高,矫正近立体视锐角显著降低(P<0.05),见表 3。

2.4 两组的治疗总有效率比较

观察组的治疗总有效率为 92.00%, 显著高于对照组的 71.15%(P<0.05),见表 4。

2.5 两组不良反应的发生情况比较

两组患者均未见明显的不良反应发生。

3 讨论

表 2 两组治疗前后的 P-VEP 比较($\bar{x}\pm$ s,n=30)

Table 2 Comparison of the P-VEP between two groups before and after treatment ($\bar{x}\pm$ s, n=30)

Groups	Eyes number	Amplitude(mv)		Latentperiod(ms)	
		Prior treatment	Posttreatment	Prior treatment	Posttreatment
Control group	52	14.92± 3.11	23.47± 5.04*	126.44± 20.65	94.81± 14.52*
Observation group	50	14.65± 2.98	34.19± 6.12*	124.75± 17.48	70.32± 12.35*
P		0.933	0.043	0.883	0.045

Note: Compared with before treatment, *P＜0.05.

表 3 两组治疗后的立体视功能改善情况比较($\bar{x}\pm$ s,n=30)

Table 3 Comparison of the improvement of stereoscopic vision between two groups ($\bar{x}\pm$ s, n=30)

Groups	Eyes number	Positive range(°)	Range of correction(°)	Correction of close stereo vision acute angle(Arc seconds)
Control group	52	13.82± 2.35	2.47± 0.51	114.54± 27.62
Observation group	50	18.94± 3.62	3.86± 0.62	82.69± 14.18
P		0.047	0.039	0.030

表 4 两组的疗效比较[例(%),n=30]

Table 4 Comparison of the total efficiency rate between two groups[Case(%), n=30]

Groups	Eyes number	Basic recovery	Progress	Inefficiency	Total efficiency
Control group	52	25	12	15	37(71.15)
Observation group	50	31	15	4	46(92.00)
P					0.000

弱视是因为患者在视觉发育时期光对眼的刺激不充分,阻碍视觉功能的正常发育,进而造成单眼或双眼的视力减退[11,12]。按照病因可分为斜视性、屈光不正性、屈光参数性和形觉剥夺性弱视[13]。其中,屈光不正弱视则占弱视发病率较高,是儿童和青少年的常见眼科疾病[14,15]。目前,屈光不正弱视的治疗以视力矫正、视觉刺激和目力锻炼等综合治疗最为多见[16-18],但综合治疗往往受病情的严重程度和患者的依从性等影响,疗效并不十分理想[19,20]。目前,已有文献报道药物疗法在治疗屈光不正弱视的显著效果[21,22]。阿托品作为非选择 M 受体的阻断剂,可拮抗睫状肌上的受体进而麻痹睫状肌,使其放松调节同时解除调节张力,起到治疗近视的作用[23,24]。有研究表明阿托品疗法治疗屈光不正弱视的疗效明显[25]。阿托品疗法对主眼进行散瞳,并戴过矫或欠矫镜,能帮助主眼和弱视眼看远或看近,从客观上强制弱视眼看物,治疗依从性较好,有助于提供视力,建立高级视功能[26]。因此,本研究将阿托品和综合疗法联合以治疗青少年屈光不正弱视,并与单纯综合疗法的疗效和不良反应情况进行比较。

对比度视力是用来评价视觉敏感度的指标,能更全面评估视功能[27]。本研究中,两组治疗后各空间频率下的对比度均高于治疗前, 且治疗后观察组各空间频率下的对比度均高对照组, 显示两种疗法均能提高青少年屈光不正患者的视觉敏感度,但联合疗法的效果更佳。P-VEP 是用于评价弱视程度地指标,反映的是对外界视觉信号的敏感度,屈光不正患者 P-VEP 潜伏期延长,波幅减小,敏感度降低[28]。本研究结果显示两组治疗后波幅高于治疗前,潜伏期低于治疗前,且与对照组相比,观察组治疗后的波幅升高,潜伏期减少,表明两种疗法均能提高对外界视觉信号的敏感度,但联合疗法效果更明显。立体视功能是视觉评价的重要指标,当存在屈光不正时,患者眼中黄斑中心凹成像不清晰,引起神经冲动传导的减弱,从而影响患者的立体视觉。而矫正幅度范围、矫正分开范围和矫正近立体视锐角是评估立体视功能的指标[29]。本研究中,观察组的矫正幅度范围和矫正分开范围高于对照组,矫正近立体视锐角低于对照组,说明联合疗法更有利于改善立体视功能。此外,观察组的治疗总有效率高于对照组,提示联合疗法较单纯综合疗法的疗效好。分析上述研究结果,原因可能是阿托品本身在提高视力并建立高级视功能方面有良好的效果,再加之阿托品疗法属于被动接受,患者的依从性较好。两组的均未发生明显的不良反应,可能是因为研究所用的阿托品浓度和使用频率低、时间短[30]。

综上所述,阿托品联合综合疗法对青少年屈光不正弱视的近期疗效较好,且安全性高。

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