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16例儿童暴发性心肌炎的临床回顾性分析

王涛 华益民 周开宇 王一斌 段泓宇 李一飞 王川 乔莉娜[△]

(四川大学华西第二医院儿童心血管科/出生缺陷与相关妇儿疾病教育部重点实验室 四川 成都 610041)

摘要 目的:通过对儿童急性暴发性心肌炎的临床表现、实验室指标、抢救治疗和转归进行回顾性分析研究,探讨小儿暴发性心肌炎的临床特点及有效安全的救治方法。**方法:**收集并分析2008年1月-2012年12月四川大学华西第二医院符合纳入标准的急性暴发性心肌炎16例,回顾性分析临床表现、心电图、心脏B超、血清生化指标、抢救治疗方法及预后,并总结其诊断和抢救治疗的特点。**结果:**16例暴发性心肌炎以学龄期儿童为主,平均年龄 (7.19 ± 4.69) 岁,入院时有消化道症状表现者10例(62.5%),有呼吸道症状表现者7例(43.75%),有循环灌注不足表现者10例(62.5%),有心脏症状(心悸、胸痛)表现者6例(37.5%),其中8例伴发热(50%)。16例暴发性心肌炎患儿入院时X线胸片9例异常表现(56.25%),其中心影增大3例,肺水肿/充血5例,胸腔积液6例;超声心动图检查8例有异常表现(50%),平均射血分数(EF)为 $(50 \pm 15)\%$,平均缩短分数(FS)为 $(29 \pm 15)\%$,左心室增大5例,左室收缩功能下降4例,瓣膜反流4例,心包积液3例;心电图均有不同程度异常表现(100%),其中III度阻滞8例(50%);肌钙蛋白升高者15例(93.75%)。抢救治疗过程中,15例使用甲强龙冲击治疗(93.75%),11例使用丙种球蛋白冲击治疗(68.75%),8例安置临时起搏器(50%),5例行呼吸机支持(31.25%),4例行血液净化治疗(25%)。其中6例于急性期死亡(37.5%),平均住院日5.3天,10例存活并好转出院,平均住院日26.5天,出院1月门诊随访,患者心肌酶、肝肾功能正常,超声心动图恢复正常,2例有继发性癫痫后遗症并长期口服抗癫痫药物。16例暴发性心肌炎中,9例合并多器官功能障碍综合征(56.25%),其中4例重症多器官功能衰竭患儿予以呼吸机辅助通气、安置临时起搏器并连续性血液净化联合治疗,3例存活,1例死亡。**结论:**暴发性心肌炎起病急,病情重,起病初期多以心外症状为主,易误诊漏诊,急性期死亡率高,对疑诊病例应行心电图、超声心动图、胸片检查并综合判断。一旦确诊需早期予抗心力衰竭,心源性休克,抗心律失常治疗。

关键词:儿童;暴发性心肌炎;诊断;救治;回顾性分析

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Clinical Retrospective Analysis of 16 Children with Fulminant Myocarditis

WANG Tao, HUA Yi-min, ZHOU Kai-yu, WANG Yi-bin, DUAN Hong-yu, LI Yi-fei, WANG Chuan, QIAO Li-na[△]

(Department of Pediatric Cardiology/Key Laboratory of Ministry of Education of Birth Defects and Related Diseases,

West China Second University Hospital, Sichuan University, Chengdu, Sichuan, 610041, China)

ABSTRACT Objective: To analyze the clinical manifestations, laboratory indexes, rescue therapy and prognosis of children with fulminant myocarditis retrospectively, and to explore the clinical characteristics and effective treatment of children with fulminant myocarditis. **Methods:** Collected and analyzed 16 children with fulminant myocarditis who were treated in the West China Second University Hospital of Sichuan University from January 2008 to December 2012, retrospectively analyzed the clinical manifestations, ECG, cardiac ultrasound, serum biochemical indicators, rescue therapy and prognosis, and summarized the characteristics of diagnosis and treatment. **Results:** 16 cases of fulminant myocarditis was mainly in school age children, the average age was (7.19 ± 4.69) years. On admission, there were 10 cases (62.5%) with digestive tract symptoms, 7 cases (43.75%) with respiratory symptoms, 10 cases (62.5%) with circulatory insufficiency, 6 cases (37.5%) with heart symptoms (heart palpitations, chest pain). Among them, 8 cases were accompanied with fever (50%). 16 children with fulminant myocarditis in the chest X-ray revealed 9 cases of abnormal performance (56.25%). Among them, there were 3 cases of cardiac shadow increase, 5 cases of Pulmonary edema/congestion and 6 cases of pleural effusion. Echocardiography showed abnormal expression in 8 cases (50%), mean ejection fraction (EF) was $(50 \pm 15)\%$, the mean fractional shortening (FS) was $(29 \pm 15)\%$, left ventricular enlargement in 5 cases, left ventricular systolic function decreased in 4 cases, valve regurgitation in 4 cases, pericardial effusion in 3 cases; ECG showed different degrees of abnormal performance (100%), III degree block in 8 cases (50%), troponin elevation in 15 cases (93.75%). 15 cases were treated with Methylprednisolone pulse therapy in the process of rescue treatment (93.75%), 11 cases were treated with immunoglobulin therapy (68.75%), 8 cases were treated with temporary pacemaker (50%), 5 cases were treated with ventilator support (31.25%), 4 cases were treated with blood purification (25%). Among them, 6 cases died in the acute phase (37.5%), the average length of stay was 5.3 days, 10 cases were survived and discharged from hospital, average length of stay was 26.5 days. Outpatient follow-up was carried out 1 month after discharge, patients with myocardial

作者简介:王涛(1982-),男,硕士,主治医师,从事儿童心血管疾病方面的研究, E-mail: wangtao1609@163.com

[△] 通讯作者:乔莉娜(1974-),女,博士,主任医师、教授,从事儿童心血管疾病方面的研究

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enzymes, liver and kidney function were normal, echocardiography returned to normal, 2 cases had secondary epilepsy sequelae and long-term taken orally antiepileptic drugs, there were 9 cases with multiple organ dysfunction syndrome (56.25%) in 16 children with fulminant myocarditis, 4 children with severe multiple organ failure were treated by ventilator assisted ventilation, placement of temporary pacemaker and continuous blood purification combined treatment, with 3 cases survived and 1 cases died. **Conclusion:** The fulminant myocarditis is urgent, and the condition is serious, the symptoms were mainly outside the heart in the early stage of the disease, which is easy to be misdiagnosed, the mortality is high in acute stage, for suspected cases should be treated with electrocardiogram, echocardiography, chest X-ray examination and comprehensive judgment. As soon as the diagnosis is made, it is necessary to treat the patients with heart failure, cardiac shock and cardiac arrhythmia.

Key words: Children; Fulminant myocarditis; Diagnosis; Treat; Analyze

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前言

暴发性心肌炎(fulminant myocarditis)是指病毒性心肌炎患儿在发病早期病情急剧进展恶化,出现心源性休克、急性左心衰竭(肺水肿)、急性充血性心力衰竭、严重心律失常、阿-斯综合征,由于心肌病变广泛,其临床表现多种多样,早期诊断困难,大多数暴发性心肌炎都在尸检时才发现^[1,2]。因此早期认识、及时抢救、降低死亡率有着重要的临床意义。本文就2008年1月~2012年12月收治的16例小儿暴发性心肌炎作临床分析,探讨暴发性心肌炎的临床特点及安全有效的治疗方法。

1 资料与方法

1.1 临床资料

收集并分析我院2008年1月~2012年12月五年间四川大学华西第二医院诊治的16例暴发性心肌炎病例,其中男9例,女7例;平均年龄(7.19 ± 4.69)岁,年龄分布4月~17岁,其中1岁以下1例,1-3岁3例,3-6岁3例,7岁及以上9例。

1.2 诊断标准

依据中华医学会儿科学分会心血管学组,中华儿科杂志编辑委员会·病毒性心肌炎诊断标准(修订草案),具备心脑血管综合征、心电图示明显心律失常、心肌酶谱异常3项主要诊断依据中的任意2项即可诊断为暴发性心肌炎^[3]。

1.3 观察指标

回顾性分析临床表现、心电图、心脏B超、血清生化指标、抢救治疗方法及预后,并总结其诊断和抢救治疗的特点。

2 结果

2.1 临床表现

入院时有呼吸道症状(流涕、咳嗽、呼吸急促、呼吸窘迫)7例;有胃肠道症状(腹痛、恶心、呕吐、腹泻)10例;心脏症状(心悸、胸痛)6例;心脏灌注不足症状(嗜睡、晕厥、抽搐、少尿、心源性休克)10例;发热病人9例。入院体征:心动过速5例,其中2例可闻及奔马律;呼吸窘迫3例;紫绀4例;肝脏增大10例;低血压7例;昏睡/无力6例;面色苍白8例,水肿2例。

2.2 心电图表现

16例暴发性心肌炎患儿入院时心电图均表现出不同程度异常(100%)。其中,ST-T异常7例,其中3例伴病理性Q波;异位心动过速2例,包括室速1例,紊乱性房速1例等;传导阻

滞11例,其中III度房室阻滞8例,其他有2度II型传导阻滞,左、右束支阻滞等。室性早搏2例,QT间期延长1例,全导联低电压1例,交界性室性逸搏2例。心电图敏感性高,对III度AVB者,及时安装临时起搏器对预后甚为重要。

2.3 胸片检查结果

16例暴发性心肌炎患儿均行X线胸片检查,9例提示胸片异常表现(56.25%)。其中,心脏增大3例(18.75%),伴肺水肿5例(31.25%),胸腔积液6例(37.5%),纵膈及颈部皮下积气1例(6.25%)。

2.4 超声心动图检查结果

16例暴发性心肌炎患儿均行超声心动图检查,8例有异常表现(50%)。平均射血分数(EF)为(50 ± 15)%,平均缩短分数(FS)为(29 ± 15)%,左心室增大5例,左室收缩功能下降4例,瓣膜反流4例,心包积液3例。

2.5 实验室检查结果

16例暴发性心肌炎患儿均检测心肌酶谱(CK,CK-Mb),升高11例(68.75%);检测肌钙蛋白阳性15例(93.75%);11例行COX血清学病原体检测,抗体阳性者8例(72.7%)。

2.6 治疗结果

本组病例均采用抗心力衰竭、抗心律失常和保护心肌的综合疗法,其中8例III度AVB伴阿斯发作者安置临时起搏器,5例行呼吸机辅助通气,4例行持续性血液净化治疗。16例暴发性心肌炎中9例合并多器官功能障碍综合征(MODS),其中4例重症MODS患儿予以呼吸机辅助通气、安置临时起搏器并连续性血液净化治疗,3例存活,1例死亡。

2.7 预后结果

16例暴发性心肌炎中,6例于急性期死亡,平均住院日5.3天,10例存活并好转出院,平均住院日26.5天。出院1月门诊随访,患者心肌酶、肝肾功能正常,超声心动图恢复正常。2例有继发性癫痫后遗症并长期口服抗癫痫药物。

3 讨论

暴发性心肌炎是心肌炎中最为严重的一种,病情变化快,常因恶性心律失常、急性心力衰竭和心源性休克,导致病人死亡^[4,5]。常见的致病因素是病毒感染,以柯萨奇病毒和腺病毒等最为多见^[6,7]。本组16例暴发性心肌炎中,11例行COX血清学病原体检测,抗体阳性者8例(72.7%),与文献相符^[8]。暴发性心肌炎可引起全身多脏器供血不足,从而导致一系列脏器缺血表

现,尤以消化道、呼吸系统多见^[9-11]。其临床表现多种多样,多以心外症状为首发表现,本组 16 例暴发性心肌炎入院时有消化道症状表现者 10 例 (62.5%),有呼吸道症状表现者 7 例 (43.75%),有心脏症状(心悸、胸痛)表现者 6 例 (37.5%),有循环灌注不足表现者 10 例 (62.5%),其中 8 例伴发热 (50%)。临床易误诊为胃肠炎、呼吸道感染、中枢神经系统感染等,病情发展至心功能不全、心源性休克及恶性心律失常才引起重视,此时抢救成功率低,多于急性期死亡。本研究中 16 例患儿中 6 例死亡,死亡率高达 37.5%,考虑与起病急骤,错过最佳抢救时机有关。因此,对于疑诊患儿,应详细查体,注意心脏听诊是否有心音低钝,奔马律,心律不齐,是否有末梢循环不良表现,观察血压及精神状况,尤其当患儿经止吐治疗无效,或热退后仍精神萎靡者应高度警惕心肌炎。

本组 16 例暴发性心肌炎患儿入院时 X 线胸片 9 例异常表现 (56.25%),其中心影增大 3 例,肺水肿 5 例,胸腔积液 6 例;超声心动图检查 8 例有异常表现 (50%),平均 EF $50 \pm 15\%$,平均 FS $29 \pm 15\%$,左心室增大 5 例,左室收缩功能下降 4 例,瓣膜反流 4 例,心包积液 3 例;心电图均有不同程度异常表现 (100%),其中 III 度阻滞 8 例 (50%),其他有 ST-T 改变,室性心动过速,早搏等;心肌酶谱 (CK,CK-Mb) 升高 11 例 (68.75%),肌钙蛋白升高者 15 例 (93.75%)。心电图检查敏感性高,但表现多样,特异性低。心肌酶谱、肌钙蛋白诊断心肌炎敏感性高。有研究显示,心肌酶谱的明显升高,LVEF 下降及出现传导阻滞的患者发展成为暴发性心肌炎的危险性高,肌钙蛋白能预测心肌炎严重程度,及短期预后^[12]。因此,对临床疑诊病例需密切观察临床症状,监测血压及心肌酶谱、肌钙蛋白、心电图,同时早期行胸片、心脏彩超检查,根据结果综合判断。

暴发性心肌炎病情凶险,进展快,短期出现心源性休克、心力衰竭、严重心律失常、阿-斯综合征,一旦确诊需早期积极抗心力衰竭,心源性休克及纠正恶性心律失常,以维持患儿正常心排出量保证正常组织灌注,特别注意纠正水电介质紊乱及酸碱平衡^[13,14]。目前对心肌炎使用激素和丙种球蛋白治疗仍存在争议,但研究认为心肌炎发病与免疫损伤有关,予激素和丙种球蛋白治疗能有效下调心肌炎所致的自身免疫反应,抑制病毒感染后的免疫损伤,促进心肌恢复^[15]。暴发性心肌炎病情进展快,病死率高,大剂量激素和丙种球蛋白可清除过度强烈的免疫反应和减轻毒素作用,有利于心肌炎症、水肿消退,帮助患者渡过急性期,挽救患儿生命^[16]。本组患儿在合并严重并发症如高度房室传导阻滞、心源性休克等情况下使用大剂量激素和丙种球蛋白冲击治疗,疗效好,未出现不良反应,提示激素和丙种球蛋白可能在暴发性心肌炎的治疗中起着重要作用,并且疗效确切。

器官功能障碍综合征 (MODS) 又称为多系统器官功能衰竭 (MSOF) 或称多器官衰竭 (MOF)^[17]。本研究 16 例暴发性心肌炎有 4 例累及 6 个脏器 (系统) 衰竭,属重症 MODS,病情极危重,特别是严重的心律紊乱、ARDS、ARF 严重威胁患者生命。其多脏器功能异常多发生在休克期,但患儿低血压纠正后仍出现多脏器功能的进行性加重,其原因可能为全身炎症反应表现,可能与病毒介导的免疫反应相关^[18]。

在抢救过程中,我们对 4 例重症多器官功能衰竭的患儿使用呼吸机辅助通气、安置临时起搏器并行连续性血液净化治疗的综合疗法。首先以呼吸机开通气道,建立人工通气,纠正呼吸衰竭,并安装临时起搏器,保证基本心律和后续用药安全,在此基础上,我们使用血液净化技术,持续超滤,清除炎症因子,阻断炎症瀑布,对患者血液动力学影响小,肾血流量无变化,有利于心肺功能及肾功能的恢复,使患者顺利地度过了危险期。同时,血液净化还为患者的营养支持疗法创造了条件,从而为各脏器功能的恢复提供可靠的保证。因此,在现代有创性抢救措施,如呼吸机、主动脉内球囊反搏、左室辅助装置及体外膜肺氧和 (ECMO) 广泛应用的时代,对各脏器的基础支持治疗也应充分重视。对重症患者多脏器功能的监测及后续治疗仍是整体治疗中重要的环节^[19]。

本研究有 2 病例的早期心跳骤停复苏过程长达 30min 以上,后期患者出现包括中枢神经系统在内的多个器官功能障碍,长期随访发现各脏器功能恢复,但遗留继发性癫痫,需长期使用抗癫痫药物治疗。其原因可能为中枢神经系统缺氧缺血时间长,导致神经系统永久性损害所致。暴发性心肌炎急性期病情凶险,但早期发现,及时抢救,预后良好^[20],本组 16 例暴发性心肌炎中,10 例存活并好转出院,长期门诊随访,患者心肌酶、肝肾功能正常,超声心动图恢复正常。因此,早期诊断及急性期救治措施仍是我们研究的重点。

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