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连续性血液净化治疗重症急性胰腺炎的临床疗效分析 *

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摘要 目的:探讨连续性血液净化治疗重症急性胰腺炎的临床疗效及安全性。**方法**:选取 60 例重症急性胰腺炎患者并随机分为两组,观察组(31 例)给予连续血液净化治疗,对照组(29 例)给予常规治疗。检测盒比较两组治疗前后 C 反应蛋白(CRP)、谷丙转氨酶(ALT)、氧合指数(PaO_2/FiO_2)、碳酸氢根离子(HCO_3^-)、血肌酐(Scr)水平、急性生理与慢性健康评分(APACHEⅡ)和多器官功能障碍综合征评分(MODS 评分)及治疗期间并发症的发生情况和存活情况。**结果**:治疗后,两组 CRP、ALT、HCO_3^-、Scr 水平均明显下降,PaO_2/FiO_2 水平明显升高(P<0.05),且观察组 CRP、ALT、HCO_3^-、Scr 水平低于对照组,而 PaO_2/FiO_2 水平高于对照组(P<0.05)。治疗后,两组 APACHEⅡ和 MODS 评分均较治疗前有所下降,且观察组分值明显低于对照组(P<0.05)。两组治疗期间并发症发生率和存活率比较差异无统计学意义(P>0.05)。**结论**:连续性血液净化治疗对重症急性胰腺炎具有较好的治疗效果,能显著改善多器官功能,降低体内炎症反应,调节水电解质平衡,治疗具有较高的安全性。

关键词:连续性血液净化;重症急性胰腺炎;临床疗效

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Analysis of The Efficacy of Continuous Blood Purfication in the Treatment of Severe Acute Pancreatitis*

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ABSTRACT Objective: To investigate the efficacy and safety of continuous blood purification in the treatment of severe acute pancreatitis. **Methods:** 60 cases of severe acute pancreatitis were selected and divided into two groups. The control group (29 cases) was given routine treatment and the observation group (31 cases) was given continuous blood purification. The efficacy of continuous blood purification in the treatment of severe acute pancreatitis was evaluated by CRP, ALT, PaO_2/FiO_2, HCO_3^-, Scr, APACHE Ⅱ and MODS scores before and after treatment, complications and survival situation during treatment. **Results:** Before treatment, there was no statistical significance in the CRP, ALT, PaO_2/FiO_2, HCO_3^-, Scr levels between two groups (P>0.05). After treatment, the CRP, ALT, HCO_3^-, Scr levels of two groups were decreased. These indexes of observation group were lower than those of the control group (P<0.05). The PaO_2/FiO_2 of both groups were increased. The PaO_2/FiO_2 of observation group was high than that of the control group (P<0.05). Before treatment, there was no statistical significance in the APACHE Ⅱ and MODS scores between two groups (P>0.05). After treatment, the APACHE Ⅱ and MODS scores were lower than those before treatment. The APACHE Ⅱ and MODS scores in the observation group were lower than those of the control group (P<0.05). During treatment, there was no statistical significance in the complications and survival rate between two groups (P>0.05). **Conclusion:** Continuous blood purification had a good therapeutic effect on the severe acute pancreatitis. It could improve the organ function, reduce inflammation and regulate the balance of water and electrolyte with high safety.

Key words: Continuous blood purification; Severe acute pancreatitis; Clinical efficacy

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前言

急性重型胰腺炎(severe acute pancreatitis,SAP)是急诊科常见疾病,发病急骤,病情危重复杂,临床表现为胰腺局部炎症反应、出血、坏死等炎性损伤。随着病情发展,炎症因子进入血液循环,造成全身炎症反应综合征,累积全身多个器官,故该病死亡风险极高[1,2]。为了有效降低 SAP 重症患者的死亡率,临床急需一种有效改善患者器官功能,及时清除体内存在的大量炎性反应介质和内毒素的治疗方法[3,4]。连续性血液净化(continuous blood purification,CBP)常用于肾功能衰竭的重症患者,随着其技术的不断发展,现也用于非肾性器官功能衰竭的救治[5]。为了探究 CBP 对 SAP 的治疗效果,本研究选取了 60 例 SAP 患者

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进行临床研究，现报道如下：

1 资料与方法

1.1 病例资料

选取我院 SAP 患者 60 例，年限：2013 年 1 月 -2015 年 12 月，纳入标准：(1)均符合 SAP 的诊断标准[6]；(2)患者临床表现为胰腺坏死，多器官功能衰竭；(3)APACHEⅡ>12 分；(4)经本院伦理委员会批准，治疗前患者均签署知情同意书；排除标准：胰腺癌患者，有出血倾向或凝血功能障碍，高血压、糖尿病、冠心病等基础疾病的患者；将入院患者按随机数字表法分为两组，对照组(29 例)给予常规治疗措施，其中，男 16 例，女 13 例，平均年龄(53.2± 7.8)岁，观察组(31 例)给予 CBP 治疗，其中，男 19 例，女 12 例，平均年龄(52.9± 6.9)岁，两组病例资料具有可比性(P>0.05)。

1.2 治疗方法

对照组：入院后给予常规治疗措施。禁水禁食，腹胀者持续胃肠减压，腹痛者镇痛药止痛，静脉输液调整体内水、电解质和酸碱平衡紊乱。尽早使用血管活性药物，避免患者因微循环灌注不足出现休克。监测患者肺功能，病发急性呼吸窘迫综合征时，给予气管插管、机械通气或高流量面罩吸氧，提高肺部气体交换能力。早期行全胃肠外营养，根据患者病情，逐步过渡到肠内营养。

观察组：在对照组治疗基础之上，采用连续性静脉 - 静脉血液滤过治疗 3~6 d。所用仪器为德国 Fresenius 公司生产的 multifiltrate EC57 型急性透析和体外血液治疗机，置换液配方应根据患者的病例资料实适当进行调整，置换液稀释后输入，流量为 1500~2000 mL·h^{-1}，血流量为 150~200 mL·min^{-1}，低分子肝素钠抗凝，定时用置换液冲洗滤器及管路观察是否有凝血。时刻监测患者生命体征，维持患者体温、脉搏、呼吸、血压和心率在正常水平范围内。

1.3 检测指标

(1) 全自动生化分析仪监测患者治疗前后 C 反应蛋白(CRP)、谷丙转氨酶(ALT)、氧合指数(PaO_2/FiO_2)、HCO_3^-、血肌酐(Scr)水平；(2)采用 APACHEⅡ评分系统和 MODS 评分系统对治疗前后患者临床症状改善和器官功能恢复情况进行评价，APACHEⅡ评分系统由急性生理学评分、年龄评分、慢性健康状况评分 3 部分组成，分值越高说明病情越严重；MODS 评分系统由 6 个脏器系统评分组成，总分 0~24 分，分值越高说明器官功能失常越严重；(3)观察并记录治疗期间患者并发症情况及死亡例数。

1.4 统计学分析

采用 SPSS 17.0 统计软件分析，计数资料以%表示，采用卡方检验，以 P＜0.05 为差异有统计学意义。

2 结果

2.1 两组治疗前后各生化指标的对比

治疗前，两组 CRP、ALT、PaO_2/FiO_2、HCO_3^-、Scr 水平相比差异无统计学意义(P>0.05)。治疗后，两组 CRP、ALT、HCO_3^-、Scr 水平均明显下降，PaO_2/FiO_2 水平明显升高(P<0.05)，且观察组 CRP、ALT、HCO_3^-、Scr 水平低于对照组，而 PaO_2/FiO_2 水平高于对照组(P<0.05)，见表 1。

表 1 两组治疗前后各生化指标对比

Table 1 Comparison of the biochemical indexes between two groups before and after treatment

Groups		CRP (mg/L)	ALT (U/L)	PaO_2/FiO_2 (%)	HCO_3^-	Scr (μmol/L)
Observation group n=31	Before treatment	142.5± 24.6	97.3± 11.5	90.4± 12.3	14.5± 2.6	179.5± 27.9
	After treatment	38.9± 10.2*#	54.3± 8.9*#	223.1± 25.8*#	20.3± 3.1*#	112.1± 22.8*#
Control groupn=29	Before treatment	137.4± .21.5	95.7± .21.5	91.7± .11.8	14.8± 2.4	181.4± 26.3
	After treatment	56.1± 9.7*	64.9± 7.5*	187.6± 19.2*	21.2± 3.2*	147.2± 20.4*

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

2.2 两组治疗前后 APACHEⅡ和 MODS 评分对比

治疗前，两组患者 APACHEⅡ和 MODS 评分相比差异无统计学意义(P>0.05)；治疗后，两组 APACHEⅡ和 MODS 评分均有所下降，且观察组 APACHEⅡ和 MODS 评分均显著低于对照组(P<0.05)，见表 2。

表 2 两组治疗前后 APACHEⅡ和 MODS 评分对比

Table 2 Comparison of the APACHEⅡand MODS scores between two groups before and after treatment

	Observation group		Control group	
Scores	Before treatment	After treatment	Before treatment	After treatment
APACHEⅡ	17.4± 3.5	11.3± 2.6*	18.1± 2.7	15.2± 2.9*
MODS	13.2± 2.5	6.3± 1.4*	12.9± 2.7	8.4± 1.8*

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

2.3 两组并发症的发生情况及存活情况比较

观察组出现 1 例血栓形成，1 例导管脱落，并发症发生率为 6.4%，死亡 1 例，患者存活率 96.8%；对照组出现 1 例血压升高，1 例微循环障碍，1 例胰腺水肿，并发症发生率为 10.3%，死

亡 3 例,患者存活率 89.6%。两组治疗期间并发症的发生率和存活率比较差异均统计学意义(P>0.05)。

3 讨论

重症急性胰腺炎(severe acute pancreatitis,SAP)属临床危重症,发病机制复杂,主要发病机制为多种因素导致的胰管内高压,病发时以胰腺局部炎症反应为主要特征并伴有全身多器官功能衰竭[7]。若不及时采取治疗措施,患者可由早期症状迅速发展为休克和多器官功能障碍综合征[8,9]。重症急性胰腺炎患者体内炎症反应活跃,炎性因子如 IL-1、TNF-α 被大量释放进入血液循环,并周游至全身,出现多脏器炎症损伤及功能衰竭[10]。由于胰腺微循环受到阻滞,也会造成胰腺出血性坏死,故病死率极高。

CBP 是 SAP 治疗中最常用的一种治疗方式,与传统间歇性血液透析治疗不同,CBP 可以有效改善患者的预后,降低病死率[11,12]。CBP 治疗 SAP 的作用机制如下:(1)清除炎症细胞因子:SAP 病发初期为局部炎症反应,在转变为全身炎症反应综合征的过程中,体内大量炎性细胞因子被释放入血[13],CBP 能通过具有强大吸附作用的高分子材料过滤器,清除炎性细胞因子(IL-1、IL-6 和 TNF-α),阻断炎症介质的瀑布式反应;(2)调节机体免疫系统:随着 SAP 病情不断恶化,多器官受到炎性因子入侵,单核细胞 MHC Ⅱ和 CD14 表达受到抑制,细胞免疫系统受到过度抑制[14,15],CBP 能有效改善单核细胞的分泌功能,解除机体免疫系统过度抑制的状态;(3)维持内环境稳定:CBP 能调节患者水、电解质和酸碱平衡,保持体内血钙浓度处于正常水平,稳定患者体内血流动力学,控制血压,进而为营养及代谢支持创造条件,提高患者生存率[16,17];(4)保护重要脏器功能:CBP 通过清除或下调循环血中炎性因子并吸附内毒素,减轻器官炎症损伤,消除内毒素对器官的免疫麻痹作用[18,19]。

CRP 是反映炎症反应程度的敏感指标,炎症反应越活跃,CRP 值越高;Scr 和 ALT 分别是反应肾功能和肝功能损伤的敏感指标,值越大说明损伤程度越明显,PaO_2/FiO_2 水平高低反映着肺呼吸功能强弱,HCO_3^- 用于衡量患者体内酸碱平衡。王立娟等[20]采用 CBP 治疗 SAP,患者治疗后 PaO_2/FiO_2、Scr、ALT、AST、PCT、CRP、WBC 等生化指标改善较为明显,明显好于常规治疗。本研究中,两组患者治疗后 CRP、ALT、HCO_3^-、Scr 水平均明显下降,PaO_2/FiO_2 水平明显升高,且观察组 CRP、ALT、HCO_3^-、Scr 水平低于对照组,而 PaO_2/FiO_2 水平高于对照组,与王立娟等研究相仿。SAP 治疗前,CRP、ALT、HCO_3^-、Scr 处于较高水平,PaO_2/FiO_2 较低,经 CBP 治疗后,均有所改善,提示 CBP 能有效保护器官功能,维持体内酸碱平衡,降低体内炎症反应程度,有利于 SAP 的治疗。APACHEⅡ和 MODS 评分均是 ICU 常用的评分系统,两组治疗后 APACHEⅡ和 MODS 评分均有所下降,且观察组分值更小,说明经 CBP 治疗后,患者病情有所好转,脏器功能有所提高。两组治疗期间并发症发生率和存活率无显著性差异,但对照组死亡例数达 3 例,且从并发症类型来看,常规治疗方法不能较好地控制机体血流动力学,调节水电解质平衡,故并发症程度较严重。观察组并发症多由于 CBP 的操作技术不当引起。

综上所述,连续性血液净化治疗对重症急性胰腺炎具有较好的治疗效果,能显著改善多器官功能,降低体内炎症反应,调节水电解质平衡,治疗具有较高的安全性。

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