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负压封闭引流技术联合前列地尔注射液对重度烧伤患者的疗效观察 *

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摘要 目的：研究负压封闭引流技术联合前列地尔注射液对重度烧伤患者的疗效观察。**方法：**选取2017年2月至2018年2月的67例患者。按照随机数表法分为观察组(n=36)和对照组(n=31)，对照组采用负压封闭引流技术治疗，观察组采用负压封闭引流技术联合前列地尔注射液治疗。观察两组治疗疗效情况，临床治疗指标(创面愈合时间、创面愈合率、VAS评分、住院时间)，C反应蛋白(CRP)、降钙素原(PCT)水平，不良反应发生率。**结果：**治疗后，观察组总有效率显著高于对照组[86.11%(31/36)vs 61.29%(19/31)](*P<0.05*)；创面愈合时间、创面愈合率、VAS评分、住院时间均显著低于对照组[(16.93± 4.19)天 vs(24.27± 6.01)天，(92.72± 5.03)% vs(81.34± 2.48)%，(2.93± 0.52)分 vs(6.70± 1.30)分，(24.09± 7.43)天 vs(46.98± 10.72)天](*P<0.05*)；CRP、PCT水平均显著低于对照组[(27.93± 3.81)mg/L vs(83.86± 7.43)mg/L，(0.10± 0.02)ng/L vs(0.43± 0.06)ng/L](*P<0.05*)；不良反应总发生率显著低于对照组[8.33%(3/36)vs 38.70%(12/31)](*P<0.05*)。**结论：**负压封闭引流技术联合前列地尔注射液对重度烧伤患者的疗效显著，可促进创面恢复，避免感染，并发症少，安全可靠。

关键词：负压封闭引流技术；前列地尔注射液；重度烧伤；创面愈合；炎性反应

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Clinical Observation of Negative Pressure Closed Drainage Combined with Alprostadil Injection in the Treatment of Severe Burns*

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ABSTRACT Objective: To study Clinical Observation of Negative Pressure Closed Drainage Combined with Alprostadil Injection in the Treatment of Severe Burns. **Methods:** 67 who received therapy from February 2017 to February 2018 in our hospital were selected as research objects. According to random number table, those patients were divided into the observation group (n=36) and the control group (n=31). The control group was treated with vacuum sealing drainage, while the observation group treated with Negative Pressure Closed Drainage Combined with Alprostadil Injection. Then the Therapeutic efficacy, clinical treatment indicators (wound healing time, wound healing rate, VAS score, hospitalization time), C-reactive protein (CRP) and procalcitonin (PCT) levels, adverse reaction rate of two groups after treatment were compared. **Results:** After treatment, The total effective rate of observation group was significantly higher than that of control group (*P<0.05*). The wound healing time, wound healing rate, VAS score and hospitalization time were significantly lower than those of the control group [(16.93± 4.19)d vs (24.27± 6.01)d,(92.72± 5.03)% vs (81.34± 2.48)%,(2.93± 0.52)scores (6.70± 1.30)scores,(24.09± 7.43)d vs (46.98± 10.72)d](*P<0.05*). The levels of CRP and PCT were significantly lower than those of the control group[(27.93± 3.81)mg/L(83.86± 7.43)mg/L(0.10± 0.02)ng/L(0.43± 0.06)ng/L](*P<0.05*). The total incidence of adverse reactions was significantly lower than that in the control group [8.33%(3/36)vs 38.70%(12/31)](*P<0.05*). **Conclusion:** Vacuum sealing drainage combined with alprostadil injection has a significant effect on severe burn patients. It can promote wound recovery, avoid infection, fewer complications, and is safe and reliable.

Key words: Vacuum sealing drainage; Alprostadil injection; Severe burn; Wound healing; Inflammatory response

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前言

烧伤是指因热力、蒸汽、高温气体、火焰等使皮肤或粘膜受到组织损害，严重的可伤及皮下或粘膜下组织[1]。皮肤是抵御微生物入侵的天然屏障，重度烧伤后会破坏这道屏障，给细菌入侵创造了机会，且坏死组织会遗留在烧伤创面上，引发持续的炎症反应，基础研究表明[2]，重度烧伤可引发即时损害和抑制组织细胞生长，给患者的生命造成了严重的威胁。因此，早期有效的治疗在重度烧伤上具有重要的意义。且有研究表明[3]，当机体受到严重烧伤后会存在休克心的现象，会导致多脏器功能损

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害，增加死亡率。负压封闭引流(VSD)技术是一种处理各种复杂创面和用于深部引流的全新方法，在传统方法的基础上创面置引流管，可使创面持续处于负压状态，通过引流管将创面坏死组织及渗液排出体外来促进创面修复，改善组织生长环境[4,5]。前列地尔注射液是一种血管活性物质，能够改善微循环[6]。本研究旨在探讨负压封闭引流技术联合前列地尔注射液对重度烧伤患者的临床效果分析。

1 资料与方法

1.1 一般资料

采集 67 例患者。纳入标准[7]：配合研究者；既往健康；烧伤深度为Ⅱ度以上；烧伤后 24h 内入院；治疗期间未发生其他严重并发症；排除标准：患有其他严重疾病；心肝肾功能严重异常者；患有糖尿病；患有静脉血栓史；创面发生感染；患有精神疾病。

按照简单随机数表法分为观察组(n=36)和对照组(n=31)，观察组男 23 例，女 14 例，年龄 21~54 岁，平均(41.83± 6.29)岁，烧伤面积 4%~10%；对照组男 20 例，女 11 例，年龄 22~54 岁，平均(42.06± 6.41)岁。两组在一般资料上均无明显差异($P>0.05$)。

1.2 治疗方法

两组患者入院后均采用常规治疗，对照组在此基础上，采用 VSD 装置对创面进行封闭引流，于每天 9 点和 16 点使用，具体操作：解除装置的负压状态，冲洗液通过装置的冲洗口注入，打开负压装置引流管，于负压状元下引流，冲洗，采用 5 mL 冲洗液每 1%创面面积，冲洗时间为 20 min，治疗 15d 时更换引流装置。观察组在对照组的基础上，采用前列地尔注射液(生产厂家：蓬莱诺康药业有限公司)治疗，每次 10 μg，加入 0.9%生理盐水 250 mL 进行静脉滴注，每日一次，治疗疗程为 2 周。

1.3 观察指标

观察两组治疗疗效情况，临床治疗指标(创面愈合时间、创面愈合率、VAS 评分、住院时间)，C 反应蛋白(CRP)、降钙素原(PCT)水平，不良反应发生率。

1.3.1 指标检测 创面愈合率 = (初始对照创面面积 - 不同时间点创面面积)/ 初始 对照创面面积× 100%[8]。分别于两组治疗前后采集静脉血，采用酶联免疫吸附法检测 CRP、PCT 水平。

1.3.2 视觉模拟评分法 (VAS) 采用 VAS 评分于两组治疗前后对患者疼痛进行评估，分值为 0~10 分，分值越高表示疼痛程度越重[9]。

1.3.3 疗效评定标准 显效：临床症状完全缓解[10]。有效：临床症状明显减轻；无效：临床症状无变化或加重。

1.4 统计学分析

使用 SPSS18.0 统计软件进行统计，数据均符合正态分布，计量资料以($\bar{x}\pm s$)表示，采用 t 检验，计数资料以[(例)%]表示，用 x^2 检验比较，采用 $P<0.05$ 为差异有统计学意义。

2 结果

2.1 两组治疗疗效情况对比

观察组总有效率为 86.11%，显著高于对照组($P<0.05$)，见表 1。

表 1 两组治疗疗效情况对比[(例)%]

Table 1 Comparison of therapeutic effects between two groups[(n)%]

Groups	n	Excellence	Valid	Invalid	Total effective rate
Observation group	36	20(55.55)	11(30.55)	5(13.88)	31(86.11)*
Control group	31	11(35.48)	8(25.80)	12(38.70)	19(61.29)

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

2.2 两组临床治疗指标对比

两组创面愈合时间、创面愈合率、VAS 评分、住院时间均存在统计学意义($P<0.05$)，见表 2。

表 2 两组临床治疗指标对比($\bar{x}\pm s$)

Table 2 Comparison of two groups of clinical treatment indicators($\bar{x}\pm s$)

Groups	n	Wound healing time (d)	Wound healing rate (%)	VAS score (score)	Length of stay(d)
Observation group	36	16.93± 4.19*	92.72± 5.03*	2.93± 0.52*	24.09± 7.43*
Control group	31	24.27± 6.01	81.34± 2.48	6.70± 1.30	46.98± 10.72

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

2.3 两组 CRP、PCT 水平对比

两组治疗前 CRP、PCT 水平均无统计学意义（$P>0.05$)，治疗后，两组 CRP、PCT 水平均较治疗前显著降低，两组存在显著差异($P<0.05$)，见表 3。

2.4 两组不良反应发生率对比

观察组不良反应总发生率为 8.33%，显著低于对照组($P<0.05$)，见表 4。

3 讨论

烧伤是致皮肤灼伤、缺失的外伤类型之一，基础研究表明[11,12]，烧伤后大量组织液以及坏死组织会渗出创面，为细菌生长、繁殖提供了条件。若对创面处理不及时，可导致创面感染，

表 3 两组 CRP、PCT 水平对比($\bar{x}\pm s$)

Table 3 Comparison of CRP and PCT levels between the two groups($\bar{x}\pm s$)

Groups	n	CRP(mg/L)		PCT(ng/L)	
		Before treatment	After treatment	Before treatment	After treatment
Observation group	52	118.48± 12.63	27.93± 3.81*#	0.42± 0.06	0.10± 0.02*#
Control group	48	119.07± 12.57	83.86± 7.43#	0.45± 0.07	0.43± 0.06

Note: Comparison with control group, *$P<0.05$; Compared with before treatment, #$P<0.05$.

表 4 两组不良反应发生率对比[(例)%]

Table 4 Comparison of the incidence of adverse reactions between the two groups[(n)%]

Groups	n	Skin graft displacement	Wound infection	Hemorrhage in wound area	Total incidence rate
Observation group	36	1(2.77)	2(5.55)	0(0.00)	3(8.33)*
Control group	31	3(9.67)	5(16.12)	4(12.90)	12(38.70)

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

引起全身炎症反应[13]。因此认为[14],其创面的修复情况与治愈率和治疗疗效有关,采用有效地处理烧伤创面对减少细菌感染具有重要的意义,且有利于后期恢复。负压封闭引流技术具有高效、全方位、零积聚的特点,可及时清除创面分泌物,减少创面感染[15-17]。由于引流管不与创面组织直接接触,创面以生物半透性薄膜封闭,形成一个密闭的引流系统,可防止外界细菌的入侵[18]。在 Pirii L E, et al 的研究中表明[19],负压封闭引流技术可控制负压,增加血液量增长和蛋白合成,促进创面愈合,治疗时间较短,可减少患者的痛苦。近年来,负压封闭引流技术在临床上已得到广泛的应用,且取得了良好的效果[20]。

前列地尔即前列腺素 E1,以脂微球为药物载体,临床研究表明[21],因脂微球的包裹,而使前列地尔不易失活。具有以下作用:可舒张血管平滑肌;可抑制血小板聚集,抑制形成血栓,从而改善血流动力;可防止再灌注损伤,稳定溶酶体膜[22]。在动物的研究中表明[23],前列地尔可改善家兔的皮瓣血流。本研究显示,采用负压封闭引流技术联合前列地尔治疗的患者创面愈合时间、创面愈合率、VAS 评分、住院时间及治疗疗效均显著优于采用单独负压封闭引流技术治疗的患者。说明了两者联合治疗可有效改善患者的病情,减少患者的疼痛,提高治疗疗效[24]。且本研究对两组治疗期间不良反应发生率观察发现,采用负压封闭引流技术联合前列地尔治疗的患者更低。说明了两者联合治疗安全可靠[25]。

基础研究表明[26,27],感染是烧伤的常见并发症,加上抗生素的使用,给治疗带来困难。CRP 具有半衰期短的特点,在感染 6~12h 会升高,与炎症反应呈正相关[28]。PCT 全身炎性反应活跃程度的指标,会因各类病菌或微生物感染而迅速升高[29]。本研究显示, 采用负压封闭引流技术联合前列地尔治疗的患者 CRP、PCT 水平均显著低于采用单独负压封闭引流技术治疗的患者。说明了两者联合治疗可更进一步降低应激反应,减少并发症[30]。

综上所述,负压封闭引流技术联合前列地尔注射液对重度烧伤患者的疗效显著,可促进创面恢复,避免感染,并发症少,安全可靠。

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