超脉冲点阵CO2激光联合富血小板血浆治疗面部痤疮后瘢痕的修复效果及机制研究

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[摘要]目的：探讨超脉冲点阵CO2激光联合富血小板血浆（Platelet-rich plasma,PRP）治疗面部痤疮后瘢痕，对患者改良温哥华瘢痕量表评分（Vancou verscar scale，VSS）及疗效的影响。方法：选取2018年6月-2020年6月笔者医院门诊的100例面部痤疮后瘢痕患者作为研究对象，根据随机数表法分为PRP组（50例）和对照组（50例），分别采用超脉冲点阵CO2激光联合PRP及单纯超脉冲点阵CO2激光治疗，比较两组临床疗效、瘢痕情况、p38丝裂原活化蛋白激酶（p38 MAPK）通路蛋白水平、炎性指标及并发症情况。结果：PRP组治疗总有效率显著高于对照组（P＜0.05）；治疗3个月后，两组VSS评分均获得明显改善，PRP组充血程度、瘢痕厚度、瘢痕柔韧度及mVSS总分均显著低于对照组（P＜0.05）；治疗3个月后，两组MAPK激酶1（MEK1）、MAPK激酶2（MEK2）、细胞外信号调节激酶1（ERK1）、细胞外信号调节激酶2（ERK2）水平均较治疗前明显降低，且PRP组各项通路蛋白水平均显著低于对照组同期（P＜0.05）；治疗3个月后，PRP组血清γ干扰素（INF-γ）、白介素-6（IL-6）、白介素-8（IL-8）显著低于对照组（P＜0.05）；PRP组红斑、感染、囊肿、脂肪液化、硬节及钙化等并发症总发生率显著低于对照组（P＜0.05）。结论：采用超脉冲点阵CO2激光联合PRP治疗面部痤疮后瘢痕，疗效确切，更有助于调节细胞生长信号通路，降低瘢痕严重程度及炎性因子水平，且具有更低的并发症发生率，安全可靠。[关键词]超脉冲点阵CO2激光；富血小板血浆；面部痤疮；改良温哥华瘢痕量表；瘢痕[中图分类号]R758.73+3 [文献标志码]A [文章编号]1008-6455（2022）09-0058-04

Study on the Repair Effect and Mechanism of Ultra-pulsed Fractional CO2 Laser Combined with Platelet-rich Plasma in the Treatment of Scarring after Facial Acne

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Abstract Objective: To investigate the effect of ultra-pulse fractional CO2 laser combined with platelet-rich plasma (PRP) on modified Vancouver Scar Scale (mVSS) score and the efficacy in the treatment of facial acne Scarring. Methods A total of 100 patients with facial acne Scarring treated in the hospital from June 2018 to June 2020 were selected as the research objects and divided into PRP group (50 cases) and the control group (50 cases) according to the random number table method. They were treated with ultra-pulse fractional CO2 laser combined with PRP and ultra-pulse fractional CO2 laser alone respectively. Clinical efficacy, scar condition, p38 mitogen-activated protein kinase (p38 MAPK) pathway protein level, inflammatory indexes and complications were compared between the two groups. Results The total effective rate of PRP group was significantly higher than that of the control group (P＜0.05). After 3 months of treatment, mVSS scores in both groups were significantly improved, and the degree of congestion, scar thickness, scar flexibility and mVSS total score in PRP group were significantly lower than those in the control group (P＜0.05). After 3 months of treatment, the levels of MAPK kinase 1 (MEK1), MAPK kinase 2 (MEK2), extracellular signal regulated kinase 1 (ERK1) and extracellular signal regulated kinase 2 (ERK2) in both groups significantly decreased compared with those before the treatment, and all pathway protein levels of in PRP group were significantly lower than those in the control group (P＜0.05). After 3 months of treatment, serum interferon γ (INF-γ), interleukin-6 (IL-6) and interleukin-8 (IL-8) in PRP group were significantly lower than those in the control group (P＜0.05). The total incidence of erythema, infection, cyst, fat liquefaction, hard nodules, calcification and other complications in PRP group was significantly lower than that in the control group (P＜0.05). Conclusion Ultra-pulse fractional CO2 laser combined with PRP in the treatment of facial acne Scarring has a definiteefficacy, which is more helpful to regulate cell growth signaling pathway, reduce scar severity and inflammatory factor level, and has a lower complication rate, with safety and reliability.

Key words: ultra-pulse fractional CO2 laser; platelet-rich plasma; facial acne; modified vancouver scar scale; scar