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·科技快讯·

脂连素通过细胞外信号调节激酶信号通路促进角质形成细胞增殖和迁移调节创面愈合

糖尿病患者是皮肤创面延迟愈合的高危人群。脂连素在糖尿病发病机制中起着中枢性作用且被认为与糖尿病的各种病理性改变有关,然而其在创面修复中的作用仍不清楚。在该实验中,研究者观察到脂连素在体内和体外参与创面修复过程。体外研究表明,正常人 KC 表达脂连素受体,脂连素与脂连素受体 1、2 结合后,通过细胞外信号调节激酶信号通路介导增强 KC 的增殖和迁移能力。体内研究显示,与野生型小鼠相比,脂连素缺陷小鼠的创面愈合时间明显延迟,而且与创面修复有关的 KC 增殖和迁移能力也明显受损,体外研究结果与之一致。对脂连素缺陷小鼠和糖尿病小鼠,在全身和局部应用脂连素后其创面愈合速度和质量均得到改善。上述结果表明,在皮肤创面修复过程中脂连素是一种有效的调节介质。在糖尿病创面的治疗过程中提高全身和(或)局部脂连素水平,是一种可行且有效的治疗方式。

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包埋有蛋白质微球活性剂的纤维纱布对创面愈合影响的评估

目前已应用含活性成分的药物和敷料处理创面,但是具有特定性能的敷料在临床应用中仍然面临挑战。本文展示了一种用于烧伤创面愈合中控制活性成分释放的新方法。棉质非编织绷带的阳离子化可促进蛋白质微球附着,其活性成分(吡罗昔康及植物油)通过超声能量包埋到微球体中,并随着 pH 值的改变从微球中释放,其对创面愈合作用的评估通过全层皮肤烧伤创面进行。与商业化的胶原蛋白敷料和其他对照相比,治疗 6 d 后,包埋有蛋白质微球活性剂的纱布在伤口愈合和再上皮化中具有良好的效果。除促进创面愈合外,这些材料还具有减轻炎症反应的作用。上述特点为这些生物材料用于创面敷料的制备打下基础。

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