

5号祛腐生肌散“生肌”作用的实验研究

天津中医学院

李建新* 汤化琴 朱晓榛 刘迪 夏蓉西 李竞[△] 徐东琴[△] 冯学瑞[△]

5号祛腐生肌散是天津市中西医结合外科疮疡研究所治疗体表溃疡常用的五种散剂之一,经多年临床观察,对疮疡溃后、脓腐已净之溃疡,确有加速伤口愈合的作用。愈合后的瘢痕多呈线型,很少发生瘢痕挛缩。为探其机理,我们进行了以下工作。

材料与方法 健康成年雄性大白鼠32只,体重 $180\pm 25\text{g}$,常规饲养1周后随机分为两组。将珍珠母、象皮、血余炭、炉甘石、血竭、儿茶、煅石膏、冰片等共研细末,过120目筛,装入棕色磨口瓶,备用。参照沈氏改良的塑料环肉芽肿定量法⁽¹⁾,制成动物的体表溃疡模型。实验组每只动物伤口外敷5号祛腐生肌散160mg;对照组外敷双层灭菌凡士林纱条,纱布敷料复盖,粘膏十字固定。术毕,将动物分笼饲养,自由进食和饮水。在术后第4、6、8、10天分别取两组动物各4只的伤口内肉芽组织,制成组织切片,经HE染色,进行组织学观察。术后第10天,过量麻醉法处死动物,分离出皮下之肉芽组织,即可得钮扣状之扁圆形标本。清洗后以纸吸干水分,先置电子天平上称其湿重,然后将肉芽标本放于 60°C 恒温箱内留置12小时,称取其干肉芽组织重量。

结果 (1)实验组动物用药后一般情况明显优于对照组,伤口处炎症反应较轻,动物进食饮水情况复常。对照组一般情况较差,伤口处炎症反应明显为重,渗出液浸透敷料。(2)5号祛腐生肌散对肉芽组织生长重量的影响。实验组动物11只,肉芽组织平均湿重 $0.979\pm 0.256\text{g}$,干重 $0.213\pm 0.116\text{g}$;对照组平均湿重 $0.387\pm 0.100\text{g}$,干重 $0.070\pm 0.017\text{g}$ 。两组比较,经统计学处理有显著性差异($P<0.01$)。(3)肉芽组织切片的组织学观察。实验组用药第4天的肉芽组织切片,镜下可见成纤维细胞数量多,排列致密,分裂旺盛。毛细血管数量多、管壁较薄、管腔较粗,而对照组成纤维细胞数量较少,毛细血管数目也较少,且有管腔较窄、管壁较厚的水肿表现。用药第8天,实验组可见毛细血管数量较多,管腔扩大,有少量胶原纤维形成,而对照组毛细血管减少,成纤维细胞变为纤维细胞,胶原纤维排列致密。实验组初、中期切片,镜下可见数目较多的巨噬细胞,而对照组明

显少于实验组。

讨论 从本实验结果分析,5号祛腐生肌散的“生肌”作用即对伤口修复过程的影响,体现在如下三个方面。(1)促进细胞的增生分化与肉芽组织的生长速度,这在一定程度上反映加快伤口的愈合速度。肉芽组织的主要成分为新生毛细血管和成纤维细胞,凡能促进成纤维细胞增殖就有利于创伤愈合⁽²⁾。本实验新生肉芽组织重量及镜下组织学观察表明,5号祛腐生肌散具有促进成纤维细胞和毛细血管内皮细胞增殖分化的作用。(2)促进巨噬细胞的游出。从实验组肉芽组织切片所见,内含较多的巨噬细胞,明显区别于对照组。伤口内的巨噬细胞,除具有吞噬细菌、异物和坏死组织碎片,提高局部的抗感染能力外,还能分泌促成纤维细胞增殖的物质⁽²⁾,并有调节胶原代谢的作用⁽³⁾,对伤口愈合有重要意义。南开大学生物系等在对生肌象皮膏治疗开放性损伤的作用进行研究时发现,用药组动物的瘢痕组织具有毛细血管丰富、纤维母细胞数量多,胶原纤维少且分布疏散的特点⁽⁴⁾,与本实验结果有相同之处。说明外用生肌药可能具有减少瘢痕形成、防止瘢痕收缩的作用。其机制与促进巨噬细胞游出有一定关系。(3)改善创面的血液循环,加速创面的新陈代谢。再生血管对伤口的修复作用至少有两个,一是提供氧和营养物质,促进局部的新陈代谢,二是组织中存在一种原始的未分化的间叶细胞,在静止时固定在毛细血管外壁上,作为血管的外被细胞存在,随着毛细血管的生长而增生,按不同需要分化为成纤维细胞等。本实验所见实验组肉芽组织生长迅速,成纤维细胞数量多且增殖旺盛,可能与新生毛细血管数目多,血运旺盛有密切关系。这或许是5号祛腐生肌散“生肌”的重要机制之一。

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micé. These findings conformed with the descriptions in ancient Chinese pharmacopeia in which *Cordyceps* was considered as a tonic particularly helpful to aged people. *Cordyceps sinensis* is actually a worm (the larva of *Hepialus armoricanus* Oberthur) infected with fungi. One specimen of fungus has been isolated and identified as *Paecilomyces hepial* Chen. The extract of mycelium cultivated by fermentation of this fungus, CsB, was shown to have pharmacological actions similar to, and even more potent than that of CsBN, the ethanol extract of the natural drug. A preliminary study on cholesterol feeding induced hyperlipidemia in rabbits revealed promising hypolipidemic and anti-atherosclerotic action of this extract. In ischemic cerebral cortex of Mongolian gerbils, pretreatment of the extract increased the content of 6-keto-PGF_{1 α} and decreased that of thromboxane B₂, therefore, increased the PGI₂/TXA₂ ratio significantly. Clinical trials with double blind method showed an average of 17.5% decrease in serum TC and 27.2% increase in HDL-C. The total effective rate for 159 cases of patients suffering from impotence was found to be 64.2% which was much higher than 23.7% of the controls. (P<0.01). (Original article on page 352)

Experimental Research on Promoting Granulation Effect of No. 5 Qufu Shengji San (祛腐生肌散)

Li Jianxin (李建新), et al

Tianjin College of TCM, Tianjin

No. 5 Qufu Shengji San (QFSJS) is one of the five powders for the common use of treatment according to the principle of eliminating the putrefied tissue and promoting the granulation in treating the superficial ulcers. It consists of *Concha Margaritifera usta*, *Elephas africanus*, *Crinis carbonisatus*, Calamine, *Daemonorops draco*, *Acacia catecha*, *Gypsum fibrosum* and *Borneolum syntheticum*. After mixing they were ground into fine powder. In clinical practice it was used in the repairing phase of the superficial ulcer after the ulceration and exhaustion of the necrotic tissue and pus. Clinical observation for several years revealed that this remedy could accelerate the healing of superficial ulcer. In order to study the mechanism of promoting granulation effect, the weight of granulation tissue was measured after applying this medical dressing typically on the superficial ulcer of experimental rats, and histological examination was also made. The result showed the weight of the newly grown granulation tissue of the experimental group was heavier than that of the control animal. Histological examination revealed that the granulation tissue of the experimental group had three characteristics: (1) Their capillaries were abundant, the caliber larger and the wall of the capillaries thinner; (2) There were more macrophages in every growing stage; (3) There were more fibrocytes with the phenomenon of karyokinesis in the initial stage.

The result of the experiment indicated that the promoting granulation effect of No. 5 QFSJS was correlated to the following three factors: (1) Promoting the proliferation and differentiation of the cell; (2) Promoting the wandering out of macrophages; (3) Improving the local blood circulation, accelerating the metabolism of the wound surface. (Original article on page 355)

Effects of Acupuncture on Cystic Activity Relevant

Discharging Units in Amygdala and Pallidum

Zhang Hui (张 会), Zhang Zhixiong (张志雄), Wu Dingzong (吴定宗)

Shanghai College of TCM, Shanghai

40 anesthetized cats with artificially respiratory state were used for experiments. The results were: (1) Electrical stimulation of lateral Amygdala area induced cystic constriction, while stimulating the medial Amygdala area and Pallidum mainly caused vesical relaxation; (2) The effect of acupuncture on elevating cystic pressure were increased by resection of forebrain behind the Amygdala and Pallidum (P<0.001); (3) Discharging of 403 neural units were investigated, among which, 55 units were correlated with acupuncture adjusting cystic activity, 32 of them were frequency-enhancing type (27 units in Amygdala, 5 units in Pallidum), while 23 were frequency-reducing type (17 units in Amygdala, 6 units in Pallidum). The change of discharge preceded that of cystic pressure in most cases. Other kinds of change of discharge were also discussed. All results revealed that acupuncture could affect the activity of Amygdala and Pallidum resulting in adjusting cystic pressure. (Original article on page 356)