

实验研究

牛皮粉抗炎作用的实验研究

天津医院骨研所 (300211) 王淑云 李秀兰 杨宝树 李长信*

摘要: 本文通过动物实验, 以小鼠腹腔巨噬细胞对异物吞噬、消化功能并明显减轻对二甲苯诱发的小鼠耳壳的炎症及对大鼠由埋藏棉球诱发肉芽组织增生的慢性炎症作用为指标, 论述了牛皮粉与象皮粉的抗炎作用无差异。

关键词: 生肌象皮膏 象皮 牛皮 抗炎作用 实验研究

本文从动物实验入手, 以牛皮粉与象皮粉及生肌象皮膏复方中含牛皮粉与象皮粉对小鼠腹腔巨噬细胞 (Mφ) 的激活作用、吞噬鸡红细胞的功能及消化程度, 对急、慢性炎症模型的影响为指标, 论述牛皮粉的抗炎作用。现将结果报告如下:

对小鼠腹腔Mφ激活作用的影响

选用昆明种小白鼠, 体重18~22g, 每批实验全部雄性或雌性。牛皮粉的制备: 将河北产牛皮脱毛压碎成粉, 取0.5g牛皮粉加1.0ml吐温-80研磨, 再加入50ml蒸馏水浸泡过夜, 以800转/分离心10分钟, 吸取上清液配制为2mg/ml浓度 (相当于生肌象皮膏中象皮粉的含量), 经高压灭菌后使用。

其它药剂的制备及实验方法参照徐氏^[1]方法, 实验结果见表1。

表 1 对小鼠腹腔巨噬细胞的激活作用

组别	N	激活百分率 ($\bar{x} \pm SD$)	P 值
对照组	9	23.00 ± 6.38	<0.001
象皮粉	9	39.22 ± 6.30	
牛皮粉	9	43.56 ± 7.40	
生肌象皮膏	9	47.00 ± 9.60	
生肌牛皮膏	9	45.89 ± 7.32	

结果表明各实验组对Mφ均有较强的激活作用, 与生理盐水对照组比较均有极显著性差异, 且各实验组间无差异。

对小鼠腹腔Mφ吞噬作用和消化异物功能的测定

以鸡红细胞作为异物观察M吞噬及消化功能。实验方法参照徐氏^[1]方法。结果见表2、表3。

Mφ吞噬功能测定, 将 \bar{x} 作 $\text{Sin}^{-1}\sqrt{P}$ 变换, 进行成组t检验, 与对照组比较均有显著性差

表 2 对小鼠腹腔巨噬细胞吞噬功能的影响

组别	N	吞噬指数 $\bar{x} \pm SD$	P 值	吞噬百分率 $\bar{x} \pm SD$	P 值
对照组	8	1.2925 ± 0.1134		21.625 ± 4.55	
象皮粉	9	1.7321 ± 0.3319	<0.01	32.483 ± 3.61	
牛皮粉	8	1.5475 ± 0.2627	<0.05	33.041 ± 4.57	<0.001
生肌象皮膏	8	1.8076 ± 0.3400	<0.01	34.680 ± 4.75	
生肌牛皮膏	8	1.7800 ± 0.2006	<0.01	32.770 ± 4.63	

异, 各实验组之间无差异。

对二甲苯诱发小鼠耳部炎症性水肿的影响

参照朱氏方法^[2]实验动物为健康昆明种杂交雄性小白鼠, 体重18 ± 2g。于实验前2小时, 各组小鼠腹腔注入不同药液2ml, 对照组注入生理盐水2ml。实验始将80%二甲苯0.05ml/只

涂于小鼠左耳。15分钟后采用脱颈椎方法处死小鼠, 用剪刀将左右耳沿耳廓剪下, 用扭力天平称左右耳重量求出两耳重量差, 然后根据下列公式求出肿胀与抑制率。

*天津市中医药研究院

表3 对小鼠腹腔巨噬细胞消化程度的影响

组别	N	消化百分率 $\bar{x} \pm SD$	P 值
对照组	8	13.96 ± 4.27	
象皮粉	9	28.73 ± 6.55	
牛皮粉	8	27.94 ± 8.33	<0.001
生肌象皮膏	8	30.99 ± 9.23	
生肌牛皮膏	8	30.14 ± 7.06	

肿胀度 = 同一只小鼠左右耳重量差。

抑制率 =

$$\frac{\text{对照组肿胀度} - \text{实验组肿胀度}}{\text{对照组肿胀度}} \times 100\%$$

实验结果见表4。结果表明牛皮粉可明显减轻耳壳由二甲苯诱发的急性炎症，使炎症的渗出减少，肿胀减轻。

表4 对二甲苯诱发小鼠耳部炎症性水肿的影响

组别	N	肿胀度 mg $\bar{x} \pm SD$	抑制率 %	P 值
对照组	10	11.6 ± 0.50		
象皮粉	10	6.1 ± 0.80	47.41	
牛皮粉	10	6.7 ± 1.80	42.24	<0.01
生肌象皮膏	10	6.8 ± 2.10	41.38	
生肌牛皮膏	10	6.2 ± 1.30	46.55	

对大鼠棉球植入法肉芽肿模型的影响

实验动物为雄性大鼠，体重150~240g，随机分组。以经高压灭菌的棉球20mg，直径6mm ± 1，各加入青霉素100单位0.1ml/个，50℃烘箱烤干作为致炎物。选用异戊巴比妥钠30mg/kg作为腹腔麻醉，在无菌操作下，经腹部切口0.5cm，将两个无菌棉球分别植入大鼠两侧腋窝部皮下，缝合3针。手术当日始给药，药量按10ml/kg计算，对照组注入等量生理盐水，连续注射五天。第六天将大鼠颈椎脱臼致死，取出棉球置60℃烤箱烤至恒重。

肉芽肿净重 = 恒重后棉球重量 - 原棉球重量

肉芽肿重量抑制百分率 =

$$\frac{\text{对照组} - \text{用药组}}{\text{对照组}} \times 100\%$$

实验结果见表5。

表5 对肉芽肿的抑制作用

组别	N	肉芽肿净重 mg $\bar{x} \pm SD$	抑制率 %	P 值
对照组	8	55.25 ± 11.51		
象皮粉	6	25.83 ± 7.84	53.21	
牛皮粉	6	28.33 ± 5.48	48.72	<0.001
生肌象皮膏	8	31.37 ± 9.10	43.21	
生肌牛皮膏	7	31.00 ± 7.08	43.89	

表5可以得出牛皮粉与象皮粉以及生肌象皮膏含牛皮粉或象皮粉对肉芽肿的抑制作用基本一致。

讨 论

本文实验结果表明牛皮粉对机体免疫活性器官具有影响，它对Mφ有激活作用。激活的Mφ体积增大，伪足多，胞浆内吞噬空泡多。牛皮粉对急性炎症及肉芽肿炎症模型也有明显的抑制作用。象皮具有消水肿、除湿气、补虚的药用早有记载，实验结果牛皮粉与象皮粉抗炎作用无差异，因牛、象同属一真兽亚纲，并经过生化和元素分析，牛皮与象皮的成分相似，且与骨折愈合有关的钙含量牛皮高于象皮。我们认为牛皮具有多种抗炎成分并有消肿功能。本文初步揭示牛皮粉抗炎原理，仅为寻找象皮粉代用品奠定理论基础。

参 考 文 献

- 徐尔真,等.生肌象皮膏抗感染作用的机理探讨,中华骨科杂志1983; 3(5):304.
- 朱秀媛,等.麝香的药理研究,药理学报1979; 14(11):685

中 医 函 授 招 生

选用全国统编高校函授教材，由专家教授针对中医自学高考全面辅导。凡高、初中以上文化的医疗卫生人员和中医爱好者均可报名。

来函请至230001合肥市阜阳路48号安徽省高校联合培训部即寄简章。

Abstracts of Original Articles

Experimental study of ox skin powder on anti-inflammatory action

Wang Shu-yun(王淑云), Li Xiu-lan (李秀兰), Yang Bao-shu(杨宝树) Li Chang-xin (李长信)

Institute of Orthopaedics of Tianjin Hospital (300211)

In this paper, via animal experiments, mouse abdominal macrophages were served as an objective parameter and found that ox skin powder could alleviate mouse earlobe inflammation induced by xylol on foreign body macrophagic and digestive function and rats through embedding cotton ball induced hyperplasia of granulosia as a chronic inflammatory action. It was found that anti-inflammatory action of ox skin powder had no significant difference with that of the elephant skin powder.

Key words Sheng Ji Xiang Pi Paste, elephant skin, ox skin, antiinflammatory action, experimental study

(Original article on page 5)

Observation on the influence of fibroblasts in the experimental fracture treated by two therapeutic principles

Chen Jun (陈俊), ShiQi (施杞) et al

Affiliated Longhua Hospital of Shanghai Traditional Chinese Medicinal College (200032)

In this article, it is introduced that application of supplement the vital energy eliminating stasis and supplement the vital energy eliminating stasis and invigorating the Kidney two therapeutic principles were treated on SD rats fracture models, and via observation of the fibroblasts on the fractured ends with electron-microscope. The results indicated that the former bears enhancing immunomacrophagic action of the organism and improving micro-circulation as well as improving the nutritional state of the cells, and the later the action was more facilitate in fracture repairing with the fibroblastic changes. So, clinically, in TCM, treatment of fracture of different stages was based on determination of treatment based in the differentiation of symptoms and signs.

Key words Traditional Chinese medicinal therapy, fracture, experimental study
(Original article on page 7)

Clinical experience in treating mal-healing with closed osteoclasia by prof. Fan Chun-zhou

Fan Jing-bo (樊景博), Zhang Li-guang (张丽光)

Traditional Chinese Medical College of Helongjiang (150040)

In this article, clinical experience of Prof. Fan Chun-zhou in treating mal-

healing with closed osteoclasia is introduced. Seventy cases with complete data were concluded. The therapeutic results were excellent in 31 cases (44%); good, 29(42%); fair, 7 (10%); ineffective, 3 (4%)

Key words Fracture, traditional Chinese medicinal therapy, experimental introduction

(Original article on page 9)

Development and application of enhanced external fixator in treating intra-articular fracture

Xie Da-zhi (谢大志) et al.

First Affiliated Hospital of Institution of Medical Science of Hunan (413000)

Thirty-three cases of intraarticular fracture were treated with self-developed enhanced external fixator of intraarticular fracture via a follow-up of 5-9 months, the rate of excellent and good was 94%. It was realized that the instrument had the advantage of new style, broadening in usage, easy to be operated, faster in fracture healing and better restoration of functions.

Key words External fixator of fracture, intraarticular fracture, exertion of pressure on cortex

(Original article on page 21)

Observation on the therapeutic effects of Cervical Huo Xue Tablet in the treatment of cervical spondylosis

Ding E (丁锴)

Affiliated Hospital of Traditional Chinese Medical College of Anhui(230031)

Cervical Huo Xue Tablet has been used in treating various types of cervical spondylosis of more than 10 years. 313 cases had long-term follow-up. Among them, 130 cases(41.5%) were markedly effective; 162 (51.8%), effective; 21(6.7%), ineffective. The rate of markedly effective and effective was 292 cases(93.3%). The results indicated that there were definite therapeutic effectiveness in radicular vertebral, sympathetic and mixed types. The mode of action was mainly alleviation and improvement of the clinical symptoms of cervical spondylosis. There was no prominent improvement of degenerative changes of cervical spine in X-ray films.

Key words Cervical spondylosis, traditional Chinese medicinal therapy, Cervical Huo Xue Tablet

(Original article on page 28)