

中药研究

陈氏膏对慢性化脓性骨髓炎模型的实验研究

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摘要 陈氏膏外敷对家兔胫骨慢性骨髓炎模型局部肿胀消退、窦道闭合、死腔范围缩小均明显优于对照组。其机理可能与促使排脓通畅,加强吞噬细胞活动,提高机体免疫力有关。

主题词 骨髓炎/中医药疗法 @ 陈氏膏

陈氏膏是杭州北大桥医院陈再璋医师研制的外用药膏,主要用于治疗慢性化脓性骨髓炎,有较好疗效。本实验研究的目的,旨在通过实验动物模型,从实验角度验证其疗效,探讨其作用机理。

1 实验材料及方法

陈氏膏主要成分为当归尾、川芎、丹参、血竭、乳香、没药、皂角刺、金雀根、木芙蓉、土槿根、苦参、山豆根等。上药研末,按传统方法制成膏药或软膏。本实验所用软膏由陈再璋医师提供。

慢性骨髓炎造模方法参沈霖法^[1]作适当改进。家兔22只,体重2.4~2.7kg,右后肢小腿内上侧剃毛,常规皮肤消毒,局麻后切开皮肤及皮下组织,显露胫骨干骺端。用2.5mm克氏针钻孔至髓腔,放出少许骨髓,特制小干棉球浸沾备用的金葡菌悬液(每ml含 3×10^7 金葡菌)约0.3ml塞入髓腔内,骨蜡封闭骨孔,缝合皮肤。2周后原切口进入,取出棉球,缝合皮肤。4周后拍X线片,检查造模成功情况。术后1周22只家兔右小腿上部出现红肿,伴有呼吸增快,食欲减退,反应迟钝,眼结膜充血等局部感染症状和相应的全身反应。术后2周,全身反应逐渐减轻,右小腿内上侧形成局限性脓肿,扣之有波动感。取棉球时见骨孔内均有淡黄色粘稠脓液渗出。4周后,局部相继溃破流脓,形成窦道。X线片显示右胫骨上端骨膜增生,髓腔中心骨质破坏,均有死腔和死骨。以上所见,符合慢性骨髓炎临床体征。

取造模成功后的家兔16只,随机分为2组,每组8只,用腿各8条。实验组:局部外敷陈氏膏,每天更换1次,3日后改为每3天更换一次。对照组:局部不作任

何处理。定期观察两组患肢肿胀消退、窦道愈合情况;定时拍摄患部X线片;敷药实验后第40天,宰杀全部家兔,取右胫骨上端骨进行病理切片。

2 结果

2.1 肿胀消退和窦道愈合情况:于实验后第6、12、18、23、28、34、40天,分别测量两组局部肿胀面积,观察局部肿胀消退、窦道闭合及复发情况。

肿胀消退以消退率(%)为指标,消退率(%)=(实验前肿胀面积-实验后肿胀面积)/实验前肿胀面积。表1示,实验组第6、12天肿胀消退速度快于对照组,至第23天,实验组肿胀已完全消退,而对照组至第40天仍有部份患肢明显肿胀。

表1 两组肿胀消退率情况比较

实验后天数	肿胀消退率(%)	
	实验组(8只)	对照组(8只)
6	39.53±3.70*	11.05±10.25
12	58.25±9.10*	26.54±11.76
18	65.06±7.93	54.47±11.20
23	93.28±6.71*	73.65±10.96
28	100*	74.05±10.35
34	100*	77.90±9.60
40	100*	78.19±10.02

表中数据为均值±标准差,以下表同

* 与对照组比较 $P < 0.01$

窦道闭合,以肉眼观察为标准,计算闭合率(%)。实验组敷药后,脓液分泌较多,窦道口肉芽水肿消退较快。在1周内,肉芽大多转为新鲜。至第23天,各患肢窦道相继闭合,后未见复发。对照组窦道口肉芽水肿明显,其闭合率与实验组比较统计学上无显著差异。但对照组在第34天观察,有部分肢体窦道再次复发,复发率为25%。

2.2 骨骼破坏及修复:于实验前及实验后第20、40天拍摄两组所有患肢X线平片,观察两组骨骼破坏及修复情况。通过计算机测定髓腔破坏面积,并计算其死腔面积缩小率(%)。缩小率(%)=(实验前死腔面积-实

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验后死腔面积)/实验前死腔面积。死腔面积的大小的变化,可以说明骨骼破坏与修复的情况。实验后第20天的X线片观察,见实验组死腔面积与实验前比较有不同程度的缩小,周缘骨质密度增高,呈现修复趋势。对照组死腔面积的变化差异较大,有修复缩小,亦有继续破坏增大现象。至第40天两组间差异更趋明显。

表2 两组窦道闭合情况比较

组别	不同时间(天)窦道闭合率(%)					
	6	12	18	23	28	34
实验组	62.5	87.5	75	100	100	100
对照组	62.5	62.5	100	100	100	75

表3 两组不同天数
X片平均死腔面积缩小率(%)比较

组别	20天	40天
实验组	37.94±5.57*	70.74±3.09*
对照组	1.18±15.76	43.92±9.13

* 与对照组比较 $P < 0.01$

2.3 病理观察:所有标本镜下所见共同病理特征:

(1)病灶中心为脓肿区,内为脓液物质,主要是坏死组织和细胞碎片,夹有大小不等的死骨,有数量不等的炎症细胞浸润。(2)脓肿周围有肉芽组织包裹,内有广泛的炎症细胞浸润,其中以浆细胞、单核细胞和淋巴细胞为主,呈片状或团状分布,越近脓区,密度越高。(3)肉芽组织外周接近骨皮质区,炎症细胞逐渐减少,大量成骨细胞增生,形成软骨样组织及新生骨组织。

实验组脓肿范围普遍较小,脓液区内有密集的炎症细胞浸润,周围肉芽组织内细胞数量较多,呈现活跃吞噬现象。同时可见肉芽组织向脓肿区延伸,将脓肿分隔成多个小脓肿的现象。对照组脓肿内及肉芽组织炎症细胞数量较少,密度低,显示吞噬不活跃。同时还可见脓液突破肉芽组织向外蔓延扩散的现象。

取两组标本,高倍镜下随机观察每个标本脓肿周围肉芽组织5个视野,作炎症细胞计数,实验组7个标本平均炎症细胞为 108.85 ± 3.92 个(均值±标准差,下同),对照组为 67.17 ± 6.67 个,两组有非常显著性差异($P < 0.01$)。实验组脓肿周围有较多的炎症细胞,有利于坏死组织的吸收。

2.4 抑菌试验:将陈氏膏均匀平涂于无菌纸上制成抑菌纸片,按卫生部临检中心临床检验操作规程KB法,分别在培养基上对金黄色葡萄球菌、铜绿色假单胞菌、埃希氏大肠杆菌作抑菌试验。结果表明,陈氏膏对

以上3种细菌均无明显抑菌作用。

2.5 皮肤急性毒性试验:选成年健康家兔4只,试验前脊柱两侧剃毛约 $10\text{cm} \times 15\text{cm}$ 大小。将陈氏膏均匀涂于剃毛区,用纱布覆盖胶布固定,24小时后去除药物及擦尽残余。每日观察家兔体重、皮肤、毛发、眼睛粘膜、呼吸及脉搏变化。连续1周。结果表明所有受试家兔均无明显全身中毒反应,皮肤无红斑和水肿。

3 讨论

中医把慢性骨髓炎称为“附骨疽”,认为是正气虚弱,邪毒入侵,腐骨化脓而成。扶正祛邪,是中医的基本治则。陈氏膏按中医理论配制,方中金雀根补气;当归、川芎、丹参养血活血;血竭、乳香、没药活血生肌;木芙蓉、山豆根、皂角刺等清热解毒,消肿排脓。全方组合,具有补益气血、活血生肌、解毒排脓的功效。从实验结果看到,该药外敷后,局部肿胀消退明显快于对照组,窦道闭合后无复发,X片及病理学观察提示死腔范围明显缩小。表明该药具有抵抗感染,加快病灶修复,促进骨髓炎愈合的作用。

实验显示,陈氏膏对骨髓炎常见致病菌无明显抑菌功效,说明该药不是通过直接杀菌抗感染发挥作用。分析其作用机理,可能有以下二个方面:(1)从实验中观察到,敷药早期,特别在1~2周内,局部脓液分泌多于对照组,说明该药能促使排脓通畅。脓液的大量流出,有利于小死骨排出,同时减轻了死腔内的张力,有效地阻止了病灶的蔓延扩散,为后期病灶修复创造了条件。(2)从病理学观察到,实验组病灶中心的脓肿范围普遍缩小,脓肿内及包裹脓肿的周围肉芽组织中有大量单核细胞、浆细胞及淋巴细胞浸润,细胞计数明显多于对照组,显示吞噬活动十分活跃。有关文献提到,具有吞噬活动的细胞,可产生多种氧化活性集团,均有强烈的杀菌作用^[2]。而上述细胞在完成吞噬、清扫坏死组织后大多可转化为纤维母细胞,最后形成纤维结缔组织^[3]。由此推测,陈氏膏的作用机理可能在于提高机体免疫抗病能力,通过加强吞噬细胞活动,消灭致病菌,加快脓肿内坏死组织的吸收,促进肉芽组织向脓腔内生长,充填死腔,为骨组织的最终修复创造有利条件。

4 参考文献

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ABSTRACTS OF ORIGINAL ARTICLES

Comparative Study on Clinical Manifestation and Its TCM Diagnosis of Chronic Hepatitis B and C.

Jin Shi, Chen Quanliang

Comparative analysis was made on 85 cases of hepatitis C and 37 cases of hepatitis B, all diagnosed by liver biopsy and virological indices. Results showed that cases in the hepatitis C group were older in age, more cases with a history of receiving transfusion and milder clinical symptoms. In diagnosis, more cases revealed stagnant blood blocking the collaterals, with less damp-heat in the interior, the Alb, T-cho1 were all lower, P-III-p was higher and few cases had GOT, GPT > 100u. It is recommended that the therapeutic principles should be clearing the liver, cooling blood, eliminating poisons hitting the aYing-blood level. To prevent relapse, emphasis should be laid on supporting the body to expel poison, activating the stagnant blood and harmonizing the collaterals.

Authors' Address: Nanjing College of TCM, Nanjing, 210029

Key Words: Infection / TCM therapy hepatitis B / TCM therapy

(Original article on page 538)

A Study on Primary Thrombocytopenic Purpura Treated by Daimao (Hawksbill Turtle) Zidian Ning.

Zhan Zhaomin, Wang Zhiping, Chen Liyun, et al.

Daimao Zidian Ning yields definite therapeutic effect on this type of purpura, with a total effective rate of 87.5%. This recipe, with its ingredients, reveals distinct inhibition action on platelet antibody with its site of action located at the level of hematopoietic stem cell.

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Key words: Purpura, thrombocytopenic / TCM therapy @ Daimao Zidian Ning

(Original article on page 541)

Epidemic Myodystonia Syndrome Treated by Integrated Traditional and Western Medicine: Report of 88 Cases.

Wang Guanghui

As one of the emergent cases in neurological department, this ailment has been treated by the author by integrated method. 88 cases were all cured, the thera-

py applied included scopolamine hydrobromide for muscular injection, acupoint injection or intravenous injection, together with our own formulation Decoction of Radix Pueraria.

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Key Words: hypermyotone / therapy of integrated traditional and western medicine @ epidemic myodystonia syndrome

(Original article on page 544)

Correlated Analysis on Finger Vessel and Microcirculation of Nail Fold in Exogenous Fever in Children: analysis of 154 cases.

Zhang Xiangping, Xing Xianghui, Dong Xihua

The relationship of children's finger vessels and microcirculation of nail fold were observed by quantitative medical methods, the results revealed that, as the body temperature of the patient increased, the skin temperature dropped and the visibility of finger vessels with its color deepened. Meanwhile, correlated changes of microcirculation in nail fold also appeared, including decrease in opening capillary loop. Shortening of capillary loop exerted remarkable influence on the changes of finger vessels.

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Key Words: Exogenous fever / blood fever / blood nail of finger (toe) / blood supply

(Original article on page 551)

Experimental Study on Effect of Chen's Paste on Model of Chronic Purulent Myelitis.

Zhu Shengliang, Zhou Linkuan, Xu Nong, et al.

By applying Chen's paste topically to the model of chronic myelitis in rabbit's tibia, local swelling became detumescent, fistula healed, with marked decrease in dead space. The results were all superior to the control group. The mechanism may lie in the smooth drainage of pus, increase of phagocytosis and body immune function.

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Key Words: Myelitis / TCM therapy @ Chen's paste

(Original article on page 553)