

通管汤对家兔输卵管炎的抗炎作用

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内容提要 本文采用苯酚糊剂造成家兔化学损伤性输卵管炎症模型,以用药组及非用药组家兔的组织学切片及用药前后的血液流变学测定作为观察指标进行通管汤的抗炎作用研究。结果表明,通管汤具有对抗输卵管炎变的效应,并提示此种效应可能是通过改善组织细胞代谢,抑制成纤维细胞增生,减少炎细胞浸润,以及降低血液粘滞度和血中大分子物质的聚集性,从而改善血液流变性,纠正局部血循环障碍而实现的。

输卵管炎性阻塞性不孕是妇科常见病,著名中医妇科专家庞泮池多年来以通管汤随症加减,治疗本病,临床获得显著成效^{〔1〕}。为进一步探讨其作用机理,我们进行了实验研究。现总结如下。

材料与方法

一、动物:未交配过的健康成年雌兔24只,体重2~2.5kg。

二、药物制备:(1)通管汤:当归9g 熟地9g 赤、白芍各6g 川芎9g 米仁12g 桃仁12g 红花12g 海螵蛸20g 生茜草9g 制香附12g 路路通15g 石菖蒲9g 皂角刺9g 败酱草15g 红藤15g (总计179g,人体用量 $\approx 4\text{g/kg}$)。按人体用量的15倍,每只兔每日120~150g。取上述生药共27kg,以每150g煎出药液40ml的比例浓煎,制成7200ml药液备用。(2)苯酚糊剂:参考绝育术的苯酚胶浆粘堵剂配方^{〔2,3〕}。取液化苯酚3ml,加蒸馏水至10ml,加入适量的CMC(化学浆糊),调制成30%苯酚糊剂。

三、实验方法:实验取24只兔,随机分为用药组与对照组,每组12只。用药组由兔心取血,测定血液流变性指标。3天后两组兔同时向双侧输卵管注入0.05~0.1ml苯酚糊剂,制成炎症模型。注苯酚次日,用药组兔再次取血测定,并每日每只兔给通管汤药液35~40ml,采取空腹插管胃饲。对照组兔同时同法给以等量自来水。注苯酚后第10天,两组兔同时处死,观察输卵管炎变情况。处死前,用药的兔第三次取血。将三次采得的兔血样本分别用毛细管粘度计及21分光光度计测定其全血比粘度(高切变、低切变)、血浆比粘度、红细胞压积和纤维蛋白原,进行分组对比。处死后,取两组兔的双侧输卵管进行组织学观察

实验结果

一、肉眼观察:用药组兔的输卵管炎症反应及周围粘连较对照组为轻。

二、组织学观察:24只兔术后死亡2只,用药中因灌药问题死亡4只,用药组余8只(16条输卵管),对照组余10只(20条输卵管)。

两组输卵管均表现为慢性炎症。按组织结构改变的程度分为正常(-)、轻度(+),中度(++),重度(+++)四级。分级标准如下:

粘膜上皮:细胞单层柱状,纤毛存在为正常;细胞立方状,纤毛部分消失为轻度;细胞扁平状,纤毛消失为中度;上皮完全消失为重度。

皱壁:无增宽、增厚,无粘连为正常;有增宽、增厚,但无粘连为轻度;增宽、增厚伴粘连为中度;大部或完全消失为重度。

粘膜固有层:无成纤维细胞增生,无炎细胞浸润,未见增厚为正常;少量成纤维细胞增生,或少量炎细胞浸润为轻度;较多成纤维细胞增生,或较多炎细胞浸润,厚度增加为中度;大量成纤维细胞增生,或大量炎细胞浸润,厚度明显增加为重度。

肌层:无纤维组织伸入,无炎细胞浸润,未见变薄为正常;稍变薄为轻度;明显变薄,伴或不伴炎细胞浸润为中度;明显变薄,大量炎细胞浸润或大量纤维组织伸入为重度。

浆膜层:无血管扩张充血,无炎细胞浸润,无成纤维细胞增生为正常;仅见血管扩张充血为轻度;血管扩张充血,并有少量炎细胞浸润或成纤维细胞增生为中度;血管扩张充血,伴多量炎细胞浸润或多量成纤维细胞增生为重度。

各层分别定级,统计各级数据,经Ridit法处理,结果固有层及浆膜层的对照、用药两组数据95%可

信限互不交迭,说明病变程度有显著差异,用药组炎变明显见轻。上皮、皱壁、肌层的两组数据95%可信限虽有部分交迭,但用药组R值均较对照组小(数据由轻到重排列),说明用药组炎变程度较对照组轻(见表1)。提出其中的上皮改变率(对照组9例,占50%;用药组2例,占12.5%)及皱壁消失率(对照组8例,占44.4%;用药组无)进行对比,经 χ^2 检验,结果有显著差异。

表1 输卵管各层炎变程度统计(输卵管数)

		炎 变 程 度				Ridit 值及 95%可信限
		-	+	++	+++	
上 皮	对照	9	6	1	2	0.5931(0.4570~0.7292)
	用药	14	2	0	0	0.3952(0.2509~0.5395)
皱 壁	对照	0	4	6	8	0.6111(0.4750~0.7472)
	用药	3	3	10	0	0.3750(0.2307~0.5193)
周 有 膜	对照	1	4	3	10	0.6675(0.5314~0.8036)
	用药	8	6	1	1	0.3117(0.1674~0.4560)
肌 层	对照	11	1	6	0	0.6662(0.4301~0.7023)
	用药	14	1	1	0	0.4256(0.2812~0.5698)
浆 膜	对照	1	5	9	3	0.6470(0.5109~0.7831)
	用药	3	12	1	0	0.3346(0.1902~0.4788)

综合上述三方面,再将输卵管总体炎变程度定为三级,进行两组对比。凡++在2项以上,或+++在3项以上为重度;++在1项以上,或++在2项以上为中度;仅有1项++或+则为轻度。根据上述分度,本文对照组轻、中、重度炎变输卵管分别为4、4、10,用药分别为14、1、1。经Ridit法处理,两组95%可信限(0.5224~0.7946; 0.1774~0.4660)互不交迭,说明用药组输卵管总体炎变程度亦有显著差异。

三、血液流变学指标观察

注苯酚前后(12例):造成炎变后测得的血液流变学五项指标中,除红细胞压积外,其余四项均较注苯酚前有明显上升趋势,其中全血比粘度高切变增高 0.30 ± 0.48 ,说明炎变造成血液的高粘聚性。低切变增高 2.56 ± 3.45 ($P < 0.05$),血浆比粘度增高 0.07 ± 0.06 ,纤维蛋白原增加 0.13 ± 0.10 (P 均 < 0.01)。

用药前后:用药后,血浆比粘度和纤维蛋白原均较用药前显著降低,尤以纤维蛋白原下降更明显,统计结果表明,与用药前比有极显著差异($P < 0.001$)。全血比粘度也有所降低,但统计差异不够显著(高切变 $P < 0.1$;低切变 $P < 0.2$),可能由于用药后动物只数减少,差异显示不出(见表2)。

表2 用药前后血液流变学指标测定 ($M \pm SD$)

	全血比粘度		血浆比粘度	纤维蛋白原
	高切变	低切变		
用药前(12例)	3.33 ± 0.53	6.55 ± 3.62	1.60 ± 0.07	0.40 ± 0.07
用药后(8例)	2.96 ± 0.26	4.80 ± 0.93	1.50 ± 0.11	0.25 ± 0.06
P值	$0.05 < P < 0.1$	$0.1 < P < 0.2$	< 0.05	< 0.001

讨 论

根据中医理论,输卵管阻塞性不孕的基本病机是气滞血瘀,瘀血阻塞胞脉。鹿师采用行气化痰的通管汤为临床主方,“疏其气血,令其条达”,因而获效。

本实验结果说明,通管汤具有对抗输卵管炎变的效应。无论是输卵管总体,还是输卵管各个层次,用药组的炎变程度都比对照组轻。

在分层对比中,尤以粘膜固有层及浆膜层的差异为显著。这两层的炎变性质有相同之处:都以成纤维细胞增生及炎细胞浸润为主。因此,用药组炎变程度显著轻于对照组,这一现象提示了通管汤对抗炎变是通过抑制纤维细胞增生,减少炎细胞浸润这两条途径实现的。而上皮细胞改变率及皱壁消失率的差异又可说明通管汤还能对抗上皮细胞变性,维持皱壁存在,从而改善内膜功能。推测是通过改善细胞代谢而实现。这或许是该方抗炎的又一作用途径。

血液流变学指标对比结果说明通管汤能降低血液的粘滞性和血中大分子物质的聚集性,因而作为血瘀形成基础的血液浓、粘、聚状态⁽⁴⁾可得到改善。血液流动性增强,一方面可纠正炎变条件下的血循环障碍,增加局部血流量;另一方面可以减少血细胞附壁,从而也减少了炎区内炎细胞的浸润。

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The Anti-oxidant Action of *Panax ginseng*

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The effect of *Panax ginseng* to prevent erythrocytes from oxidation caused by oxygen free radical is presented in this paper. When erythrocytes were exposed to oxygen free radical generated in vitro, hemoglobin breakdown, and lipid peroxidation as well as hemolysis occurred. These reactions could be inhibited by *Panax ginseng* preparations. *Panax ginseng* could act as a scavenger of superoxide anion (O_2^-) and hydroxy radical ($\cdot OH$); it also can protect erythrocytes from oxidation induced by hydrogen peroxide (H_2O_2). The results showed that *Panax ginseng* might be possibly used as an anti-aging drug.

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Experimental Study of PAC Injection in Preventing and Treating Endotoxin Shock in Rats

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53 Wistar rats were used for investigating the effect of PAC (*Panax ginseng*, *Aconitum carmichaeli*, *Citrus tangerina*) injection on endotoxin shock. (1) Immediately after the endotoxin (4 mg/kg per rat) were injected intravenously into all animals, group A received 3 ml PAC injection given i.v. dripping, while group B received the same amount of saline. It revealed that the blood pressure of group A remained normal but that of group B was lowered significantly (t test: 15' t=1.077, P>0.05; 30' t=1.983, P>0.05; 45' t=3.21, P<0.01; 60' t=3.7, P<0.01). (2) After an injection of 4 mg/kg endotoxin, their blood pressure gradually dropped to 80 mmHg. And then group A received PAC injection and group B the saline. It was found that the blood pressure was normalized after PAC injection, while saline proved to be ineffective (t test: 15' t=5.73, P<0.001; 30' t=4.675, P<0.001; 45' t=3.74, P<0.01; 60' t=3.436, P<0.01). (3) Endotoxin was given via external jugular vein to all animals, and PAC was dripped into femoral vein of group A and normal saline to those of group B simultaneously. The change of mesenteric arteriole lumen was observed and measured by means of close circuit TV system. After 90 minutes, it was found that the change was $15.41 \pm 2.96 \mu m$ in group A, and $12.08 \pm 2.57 \mu m$ in group B (P<0.05). After 120 minutes it was $15.27 \pm 2.65 \mu m$ and $11.25 \pm 2.25 \mu m$ respectively (P<0.01). These data indicated that PAC injection was effective not only in preventing and treating endotoxin shock in rats, but also in inhibiting the constriction of mesenteric arteriole caused by endotoxin.

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Anti-Inflammatory Effect of Tong Guan Decoction (通管汤) on Rabbit's Chemical Salpingitis

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Phenol-induced chemical salpingitis of rabbit was chosen as experimental model. Two groups were formed. Tong Guan decoction (通管汤) group and control group. After medication, pathological examination was done on both groups. The result of the experiment has proved that Tong Guan decoction was effective on chemical salpingitis. The difference between these two groups was significant statistically, (with Ridit method, 95% believable limit was no interlock). The effect was brought about by improving the cell metabolism, inhibiting the hyperplasia of fibrocytes and reducing the infiltration of inflammatory cells. The difference was also significant between these groups both in salpingian epithelium, submucous and serous membrane. The indices concerning rabbit's hemorheology were also analysed before and after medication. It indicated that Tong Guan decoction could improve the viscosity of blood and aggregation of blood cell. The blood flow was increased in inflammatory area, and the circulatory disturbance was corrected. The differences of the indices between pre- and post-treatment were significant, P<0.05 and P<0.001.

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