

铁皮石斛与西洋参的养阴生津作用研究

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摘要 铁皮石斛和西洋参能改善甲亢型阴虚小鼠的虚弱症状,两药合用可有效地保护阴虚小鼠免于死亡。两药均能对抗阿托品对唾液分泌的抑制作用。合用后还能促进正常家兔的唾液分泌。本研究用实验验证了铁皮石斛和西洋参的养阴生津功效,并发现两药合用具有协同作用。

关键词 铁皮石斛 西洋参 阴虚 唾液分泌 养阴生津

据中医典籍记载,铁皮石斛*Dendrobium candidum* Wall.ex Lindl,有养阴、生津止渴之功效^[1],西洋参*Panax quinquefolium* L.也有养阴生津功效^[2]。今选择对甲亢型阴虚模型小鼠的疗效和家兔唾液分泌功能的影响,研究了铁皮石斛和西洋参的养阴生津作用及两药合用的协同效果。

1 材料

药品:铁皮石斛浸膏,用野生铁皮石斛提取制成,每克含铁皮石斛生药2.27g;西洋参浸膏,用国产西洋参提取制成,每克含西洋参生药1.52g。均由浙江天台县中药药物研究所鉴定后制备。甲状腺片(浙江金华生物化学制药厂);利血平注射液(天津市人民制药厂)。

动物:小鼠,NIH种,雄性,体重20~24g。家兔,雌雄兼用,体重1.7~2.2kg,均由浙江医科大学实验动物中心提供。

2 方法与结果

2.1 铁皮石斛与西洋参对甲亢型阴虚模型^[3]小鼠的疗效:(李仪奎主编,中药药理实验方法,上海:科学技术出版社,1991.272)小鼠40只,雄性,随机分成4组,每组10只。各组每天均用甲状腺素3mg及利血平0.02mg灌胃,连续6d。同时分别以下列药物灌胃。A组给铁皮石斛0.5g/kg, B组给西洋参0.5g/kg, C组给铁皮石斛和西洋参各0.25g/kg,以上剂量均以生药g/kg计算,对照组D组给等容量生理盐水。记录并比较各组小鼠的体重、进食量、进水量及8d内死亡数。结果表明,对照组小鼠在给药第6天体重明显减轻,进食量与进水量明显减少,外观少动,并逐渐死亡,至第8天全部死亡。铁皮石斛0.5g/kg及西洋参0.5g/kg均有一定疗效,给药组小鼠体重减轻,进食量与进水量减少均不如对照组明显,死亡率也比对照组低。两药各0.25g/kg合用的作用更明显,死亡率与对照组比较有显著差异($P < 0.01$)。因每组10只小鼠放在一笼内饲养,故进食量与进水量不能用 $\bar{x} \pm SD$ 表示,但也能看出给药组与对照组间差异。见表1~3。

2.2 铁皮石斛与西洋参对家兔唾液分泌的影响:家兔24只,随机分成4组,每组6只,雌雄各半。停食24h,只供水。给药前分别测定各兔的唾液分泌量。测定方法是用止血钳将相近重量的干棉球($100 \pm 10\text{mg}$)一个,分别在兔口腔的一侧颊部先揩一遍,后将棉球放在上齿最后一颗牙齿根内侧靠近腮腺开口处,2min后取出称重,减去棉球干重,为唾液量,将两侧的唾液量相加,即为该兔的唾液量。A组给铁皮石斛0.125g/kg, B组给西洋参0.125g/kg, C组给铁皮石斛与西洋参各0.125g/kg,以上剂量均按生药g/kg计算,对照组给生理盐水5ml

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表1 铁皮石斛与西洋参(胃灌)对甲亢型阴虚小鼠的疗效

药 物	剂 量 g/kg·d×6	鼠数 (只)	体 重 (g, $\bar{x} \pm SD$)		死亡率 (%)
			给药前	给药第6天	
对 照		10	20.3±3.6	14.7±2.2***	100
铁皮石斛	0.5	10	19.9±1.7	16.8±2.8*	70
西 洋 参	0.5	10	19.7±1.0	16.6±1.8**	60
铁皮石斛	0.25	10	19.8±1.0	17.2±2.6**	30**
+西洋参	0.25				

t检验, 体重与给药前比*** $P<0.001$, ** $P<0.01$, * $P<0.05$, 死亡率与对照组比, ** $P<0.01$

表2 铁皮石斛与西洋参(灌胃)对甲亢型阴虚小鼠进食量的影响

药 物	量剂 g/kg·d×6	鼠数 (只)	平均进食量(g/只)		进食量减少率(%)
			给药前	给药第6天	
对 照		10	4.9	0.8	84
铁皮石斛	0.5	10	5.8	3.1	47
西 洋 参	0.5	10	5.3	3.2	40
铁皮石斛	0.25				
+西洋参	0.25	10	5.6	3.8	32

表3 铁皮石斛与西洋参(灌胃)对甲亢型阴虚小鼠进水量影响

药 物	剂 量 g/kg·d×6	鼠数 (只)	平均进水量(ml/只)		进水量减少率%
			给药前	给药第6天	
对 照		10	4.8	0.8	83
铁皮石斛	0.5	10	5.7	2.2	61
西 洋 参	0.5	10	5.3	1.8	66
铁皮石斛	0.25	10	5.2	2.2	54
+西洋参	0.25				

/kg, 各组均灌胃给药。于给药后3h, 按上法测定各兔的唾液分泌量。然后给各兔静注硫酸阿托品0.5mg/kg, 5min后当兔的瞳孔明显扩大时, 再测定各兔的唾液分泌量。

实验结果表明, 铁皮石斛与西洋参均能拮抗阿托品对家兔唾液分泌的抑制作用, 与对照组比较有显著差异($P<0.05$)。两药合用能明显增加未经阿托品处理家兔的正常唾液分泌量($P<0.05$)。见表4。

表4 铁皮石斛与西洋参(灌胃)对家兔唾液分泌的影响

药 物	剂 量 (g/kg)	兔数 (只)	唾液量(mg, $\bar{x} \pm SD$)		
			给药前	给药后	给阿托品后
对 照		6	157±27	152±24	55±14***
铁皮石斛	0.125	6	152±49	124±27	76±23*
西 洋 参	0.125	6	130±47	130±34	88±19*
铁皮石斛	0.125	6	137±30	173±52*	88±10*
+西洋参	0.125				

t检验, 与给药前比*** $P<0.001$, * $P<0.05$

3 讨论

《中药志》记载, 石斛有“养阴益胃、生津止渴”之功效, 用于“热病伤津, 口干烦渴, 病后虚热”。铁皮石斛乃石斛的一种珍贵品种。俗称铁皮枫斗。西洋参也有养阴生津之功效, 用于口干重燥, 阴虚发冷等。今用甲亢型阴虚小鼠模型研究了两药的作用, 结果表明, 铁皮石斛和西洋参能明显改善甲亢型阴虚小鼠的虚弱症状, 给药组小鼠体重减轻, 进食量和进水量减少均不如对照组明显, 且两药合用可保护阴虚小鼠免于死亡。家兔唾液分泌试验的结果又表明, 两药均能对抗阿托品对兔唾液分泌的抑制作用, 合用时还能促进家兔的正常唾液分泌。以上结果验证了铁皮石斛和西洋参的养阴生津功效, 并发现西药合用具有协同作用。这为两药用于“口干烦渴、阴虚”等症以及合并应用或配伍组方提供了实验依据。

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short-haired albino guinea pigs, in comparison with conventional gauze dressing, it showed no significant differences in preventing wound infection, but is more effective in reducing wound exudation or enhancing wound healing ($P < 0.001$). It has the extra advantage of reducing edema and relieving skin irritation. It is convenient to apply and quality control analysis showed that the film is stable.

(Original article on page 68)

Procedure for the Industrial Production of Sodium Alginate from Lieyemaweizao (*Sargassum siliquastrum*)

Gong Yuchuan, Zhang Mingzhu, Zou Hengqin

Process for the industrial production of sodium alginate from *Sargassum siliquastrum* was reported. The main influential factors in the extraction process were discussed in detail. As a result, the product conformed to British Pharmacopoeia (1968) in colour, lustre, purity and heavy metals. The yield was 20%.

(Original article on page 70)

Primary Study on the Effect of Xanthotoxin, and Umbelliferone in Photochemotherapy

Li Jiarong, Cheng Nanqiu, Luo Chaodong, et al

External use of either xanthotoxin or umbelliferone alone in normal rats showed that the chromosomes of the myelocyte were mutated at an aberrant rate of 2.0% and 0.2%, respectively ($P < 0.01$). When used in combination with UV-N irradiation for one week, the aberrant rate was 6.0%, and 1.0% respectively ($P < 0.001$). At two week's treatment they were 4.0%, and 2.0%, respectively ($P < 0.05$). It is thus suggested that in photochemotherapy xanthotoxin for external use have obvious mutational effect and umbelliferone have a protective action against irradiation.

(Original article on page 77)

Studies on the Effects of White Dendrobium (*Dendrobium candidum*) and American Ginseng (*Panax quinquefolius*) on Nourishing the Yin and Promoting Glandular Secretion in Mice and Rabbits

Xu Jianhua, Chen Lizuan, et al

Results of the study showed that *Dendrobium candidum* and domestically cultivated *Panax quinquefolius* can alleviate asthenic symptoms in mice with thyroidism-type "Yin" deficiency. Combined use of these two drugs protected these mice from death. Both drug antagonized the inhibitory effect of atropine on salivary secretion in rabbits, and when used in combination even increased salivary secretion in normal rabbits. These results proved that *D. candidum* and domestically cultivated *P. quinquefolius* possessed the effects of nourishing "Yin" and promoting glandular secretion with a synergistic effect when used in combination.

(Original article on page 79)