DOI:10.16016/j.1000-5404.1992.01.002

Therapeutic effects of tetrandrine on the changes of cytosolic free calcium of neutrophils after smoke inhalation injury in rabbits

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Abstract The changes of cytosolic free calcium in the peripheral neutrophils after the rabbits were exposed to smoke inhalation were observed and the ptherapeutic effects of tetrandrine—a calcium antagonist— on the level of free calcium and on the injury also studied. It was found that the number of neutrophils increased significantly in the peripheral blood after a transient drop and it also increased in the bronchoalveolar lavage fluid. The level of free calcium in the neutrophils were increased at the same time.

Tetrandrine could reduce the number of neutrophils in the lungs, the calcium level in the neutrophils, and the severity of inhalation injury.

The findings suggest that there is a close relationship between the activation of neutrophils and the pathophysiological manifestations of smoke inhalation injury, and tetrandrine can exert certain therapeutic effects on smoke inhalation injury through reducing the level of cytosolic free calcium in the neutrophlis to modulate their functions

Key words burns, inhalation; neutrophils; calcium; tetrandrine; rabbits

学员检查吞噬细胞吞噬作用实验的改进

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吞噬细胞（主要包括血液中的嗜中性粒细胞，大单核细胞和组织中的巨噬细胞）吞噬作用的检查是非抗原特异性免疫实验中主要的内容之一，也是微生物学教学中学生需要操作的实验。以往是由学生扎自己的手指尖后挤出血液从而获得嗜中性粒细胞，常因扎血技术不熟练而得到的血液较少或取不到血液，难以获得足够的嗜中性粒细胞，所以大多数学生做不出阳性结果。针对这一情况，经摸索，改用医院检验科做试验后的废血代替由指尖取血，从而获得丰富的具有活性的嗜中性粒细胞，并可减少学生扎手指的痛苦，简化操作程序，既省时又省器材，95%以上的学生都可得到阳性结果。现将方法介绍如下：

1 材 料

1.1 肝素抗凝血（收集医院检验科做试验剩下的废血）1000rpm离心8 min，使血浆与血球分离；

1.2 菌液：葡萄球菌菌液50亿/ml，加热100℃15 min，冷却放4～8℃冰箱内备用；

1.3 小试管、毛细滴管、乳头、载玻片等；

1.4 甲醇、快速染色液。

2 方 法

用毛细滴管取肝素抗凝血的血浆与红细胞交界处的白细胞层液，放于一小试管内，再加入1/10量的葡萄球菌菌液，摇匀，放37℃水浴孵育15～20 min后，摇匀，用毛细滴管取一小滴放载玻片上，制成血薄膜涂片，自然干后，加两滴甲醇固定，用快速染色液染色，干后，油镜检查。

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A clinical study of the influence of three types of subtotal gastrectomy on intragastric bacterial growth

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Abstract Detailed analysis of intragastric acidity and bacterial variables including total viable bacterial count (TBC), oral bacterinl count (OBC), intestinal bacterial count (IBC) and nitrate-reducing bacterial count (NRBC) and bacterial identifications were performed on 51 samples of fast jastrc juice obtained at endcscopy for 13 cases with Billroth I subtotal gastrectomy, 19 cases with Billroth II gastrectomy, 11 cases with pylorus and antroseromuscular preserving gastrectomy (PAFPG), and 8 normal controls.

No significant difference of OBC was found among the 4 groups while the average TBC, IBC, and NRBC and the pH value were much higher in B-I and B-II groups than in PAFPG and control groups ($P>0.05—0.001$). In the latter 2 groups the 4 parameters were similar ($P>0.05$). Large amounts of E. coli and intestinal aerobics such as Veillonella spp., Bacteriodes fragilis, and Clostridium spp. were detected in patients with B-I and B-II especially the latter but not found in those with PAFPG.

These findings suggest that intragastric bacterial overgrowth, can exist in the hypoacidic stumps in the first one to three years afte conventional gastrectomy especially after B-II, no such occurrence is found in those after PAFPG since it only moderately reduces the intragastric acidity.

Key words: gastrectomy; achlorhydria; bacteria

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3 结　果

此涂片上很容易找到嗜中性粒细胞，且能清楚地看到吞噬的葡萄球菌。

经1989至1991年在学生实验课中应用，除个别人外，都能得到阳性结果。此法还可用于科研和临床检查吞噬细胞的吞噬功能。

4 注意事项

4.1 肝素抗凝血收集后当时不用可置4～8℃冰箱内保存，若无细菌污染，存放80h内白细胞的活性不受影响。

4.2 人类白细胞活性在37℃时最好，因此温度过高或过低都将影响其吞噬能力。

4.3 在37℃孵育5min即可找到吞噬了细菌的嗜中性粒细胞，但以15～20min内出现的阳性率高，超过25min后有的嗜中性细胞开始破裂。

关键词 吞噬细胞；吞噬作用

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（收稿：1991-09-17；修回：1991-12-02）

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