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Long-term potentiation and the effects of 3 convulsants on its induction in hippocampal slices of rats

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Abstract Long-term potentiation (LTP) of synaptic transmission between the dendrites of the pyramidal cells of CA_1 region and the Schaffer-commissural pathway was induced with electric stimulation in the isolated hippocampal slices of rats. The effects of 3 convulsants, soman, kianic acid, and picrotoxin, on the induction of LTP in this region were observed. It was found that a short series of electric impulses could effectively induce LTP in most of the slices of the hippocampus and the amplitude of the population spikes showed a similar change as the field excitatory postsynaptic potential did in the rising phase. Picrotoxin could facilitate the induction of LTP when it evoked an epileptoform electric activity in the slices, kianic acid could also evoke an epileptoform activity but significantly blocked the induction of LTP, and soman could not evoke obvious epileptoform activity but blocked the induction of LTP. The above findings suggest that a short series of electric impulses can effectively induce LTP between the pyramidal cells and the Schaffer-commisural pathway in the CA_1 region, the effects of epileptoform activity on the induction of LTP depends on the mechanism to evoke the epileptoform activity, and the effects of soman on the induction of field potential may involve the noncholinergic system in the synaptic connections.

Key words hippocampus; picrotoxin; kainic acid; soman

急性甲醇中毒死亡一例报告

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本文报告1例误饮甲醇（工业酒精）急性中毒死亡病例。

1 病 例 摘 要

李××、男性、36岁，工人。因双下肢无力10个月于1987年10月24日入院。缘于1987年初感双腿无力，僵硬并逐渐加重，行走困难伴有头昏、视力减退。曾在本院门诊多次检查四肢腱反射活跃，双侧Hoffmann's征（+）。入院前颈椎CT检查：发现颈$_{3-4}$，$_{6-7}$椎间盘突出，经推拿等治疗效果不满意。既往饮酒20余年，1次饮酒量可达500ml以上。曾多次酒后摔倒昏迷住院抢救清醒。入院时查体欠合作，表情淡漠，反应迟钝。心脏未闻杂音、律齐，心率80次/min。两肺呼吸音清晰。腹软、肝在剑突下4cm，质中等，无压痛，脾未扪及。

专科情况：颈软，颈椎棘突两侧无固定压痛，各问活动如常。四肢肌肉明显萎缩，上肢肌力5级，下肢肌力4级，肌张力增高，腱反射亢进，双侧Hoffmann's征（+），踝阵挛（+）。院诊断：（1）颈椎间盘突出症；（2）脱髓鞘疾病（酒精中毒？）。

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A study of the relationship between resting energy expenditure (REE) and extensiveness of burned area in burn victims

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Abstract The rate of resting energy expenditure (REE) was determined in 75 cases of burn patients with different total areas of burned wounds. It was found that:

1. The rate of REE increased with the increase of the total area of burned wounds.
2. When the total burned body surface area was equal, the rate of ERE increased more signficantly in the case with more extensive third degree burns.
3. In the period immediately after the healing of the burned wounds, the rate of REE remained significantly higher than in the normal subjects.

Key words burns; resting energy expenditure (REE)

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患者入院后当天喝白酒500ml，连续跌倒3次。次日又误饮工业酒精（甲醇）约300⁺ml。入院第4天出现视力模糊、语言不清，发绀，口吐白沫继之昏迷、经抢救无效死亡。死后诊断：（1）急性甲醇中毒；（2）慢性酒精中毒；（3）颈椎病；（4）脑萎缩。

送检误饮的工业酒精100ml，药检报告甲醇含量5.2%（中国药典规定药用酒精甲醇含量<0.20%）

2 讨 论

该患者因多年酗酒成瘾，住院后误饮工业酒精300⁺ml而急性甲醇中毒致死。甲醇毒性极为强烈，常人服甲醇4g—7g可急性中毒，12g致双眼失明，15g以上则能骤死。本例误饮工业酒精300⁺ml，甲醇含量超过15g，已达致死量。甲醇为水溶性物质、消化道吸收迅速，组织内含量与各器官含水量成正比。甲醇在体内氧化形成甲醛及甲酸、它们是强烈的神经血管毒物，直接作用于中枢神经系统及各器官组织。急性中毒潜伏期约24h、若同时饮酒潜伏期可延长。因为乙醇可拟制甲醇在体内氧化并加速其排泄，减低甲醇的毒性作用。该患者误饮甲醇前曾喝白酒500ml，且平时嗜酒，故潜伏期长达48h。甲醇轻度中毒有眩晕、头痛、嗳心、呕吐、步态不稳，畏光及视力障碍等。严重中毒呈现发绀、谵妄，失明、神志不清，四肢痉挛，惊厥乃至呼吸循环衰竭死亡。测定血、尿甲醇，甲酸（尿甲醇>0.75mg%，尿甲酸>120mg/d），结合病史可以确诊。对此类患者如能早期诊断，及时采用透析治疗，排出甲醇甲酸，纠正酸中毒，维持水电平衡等抢救措施，部分患者可能获救。

关键词 甲醇；甲醇中毒；甲醛；甲酸；透析治疗

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