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Effects of electroacupuncture on hippocampal epileptic burst discharges induced by intracerebroventricular injection of kainic acid in the rat

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Abstract Epilepsy induced by intracerebroventricular injection of kainic acid in the rat could be attenuated by electroacupuncture (EA) at the "Du Mo point" since EA resulted in a reduction of the frequency and amplitude of the hippocampal EEG especially in the 1st min after EA. No unsynchronization of the hippocampal EEG occurred before or after EA. The hippocampal unit discharges after intracerebroventricular injection of kainic acid were classified into positive units, negative units and indifferent units, The positive units were inhibited by EA while the negative units, on the contrary, were activated. The positive units (21%) and the indifferent units (33%) were converted into negative units by EA. At the same time, EA reduced the NSEB value and IBSF value of hippocampal epileptic burst discharges.

On the basis of these findings, it is believed that the inhibition of the amplitude of hippocampal epileptic EEG by EA plays an important role of the antiepileptic action of EA, hippocampal negative units are one of the factors of antiepileptic action, and EA can regulate the intrinsic characteristics of epileptic neurones.

Key words epilepsy; kainic acid; hippocampus; rats; burst discharges

电离辐射对造血细胞增殖发育及功能的影响

第三军医大学 871 队防原医学第二课堂研究小组

22 只 Wastar 大鼠随机分为正常对照组和放射损伤组(^{60}Co-γ 线 8Gy 全身一次照射)。以骨髓有核细胞计数,骨髓粒系祖细胞(CFU-GM)培养,骨髓及外周血红细胞微核发生率分析和外周血白细胞吞噬化学发光为主要观测指标,重点探讨不同发育阶段的造血细胞(幼稚和成熟的血细胞)对电离辐射的损伤反应,以期对急性放射病的诊治提供一定实验依据。

结果表明,与正常对照组比较,8Gy 照射后 24h,骨髓有核细胞数明显下降($P<0.01$);CFU-GM 增殖集落正常对照组为 35.1±7.1 个/皿,照射组下降为 1.7±2.1 个/皿,($P<0.01$);骨髓微核发生率由正常对照的 3.7‰±2.6 升高为 19.3‰±5.0 ($P<0.01$)。外周血应为发育成熟的功能血细胞,在电离辐射作用下,亦发生异常的形态和功能改变,表现为红细胞微核形成率增高($P<0.01$),吞噬细胞(主要是粒细胞)的吞噬化学发光减弱,正常对照为 217.6±38.5cpm/s;照射组为 78.8±31.7cpm/s($P<0.01$)。

造血功能障碍是骨髓型急性放射病的发病基础,本实验几项相关指标均证实,大剂量电离辐射不

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The effects of indomethacin on thromboxane A_2/Prostacyclin ratio after spinal cord injury in rats

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Abstract The changes of the spinal cord blood flow (SCBF), the content of TXB_2 and 6-keto-$PGF_1\alpha$ of the injured segment of the cord and other neurological manifestations were observed on a rat model of spinal cord injury (SCI) established with Allen's weight drop (50g-cm) method and the effects of indomethacin on these changes were studied. It was found that SCBF was significantly reduced in the first 2 hours after SCI and further reduced in the 4th～8th hour. Increase of TXB_2 was observed in the 1st hour and reached the peak in the 4th hour. The level of 6-keto-$PGF_1\alpha$ was also increased in the 1st hour and maintained at that level for 24 hours. The changes of TXB_2/6-keto-$PGF_1\alpha$ was similar to those of TXB_2. There was a negative correlation of SCHF with TXB_2 content and TXB_2/6-keto-$PGF_1\alpha$ ratio. The intravenous injection of 10mg/kg indomethacin could inhibit the increase of TXB_2 content and increase 6-keto-$PGF_1\alpha$ content relatively. It could also alleviate or retard the decrease of SCBF after SCI and improve the motar function of the hind limbs of the rats. These findings suggest that indomethacin can improve SCBF and promote the recovery of neurological functions through its regulatory effects on the levels of TXB_2 and 6-keto-$PGF_1\alpha$.

Key words indomethacin; spinal cord injuries; thromboxane A_2; prostaglandins X

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仅引起各系造血细胞数量减少，分化发育障碍，而且对已分化成熟的血细胞也有明显的功能抑制，诊治时应充分注意这些变化。

微核发生是由于细胞分裂间期染色体断裂或纺锤体功能失调所致，多数研究表明，微核发生率与染色体畸变密切相关[1]，并与电离辐射剂量之间存在明显的量效关系[2]，可考虑作为生物剂量仪应用于早期临床诊断。

（本实验承蒙防原医学教研室第二课堂指导，小组老师的指导，谨致谢意。）

关键词 辐射，电离；造血干细胞；吞噬细胞

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