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Expression of proapoptotic gene Bax in gastric carcinoma and its significance

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Abstract Objective: To investigate the expression of proapoptotic gene Bax in gastric carcinoma and its significance. Methods: The expression of Bax protein was detected with immunohistochemistry in samples from 57 cases of gastric carcinoma. Results: The positive rate of Bax protein staining was 57.89% and the positively reactive substance was mainly localized in the cytoplasm of cancerous cells. The expression of Bax protein was not correlated to the tumor size, lymph node metastasis, depth of invasion, Duke's stage of the tumor and age and sex of patients ($P > 0.05$) but strongly associated with the morphological type and differentiation degree of the tumor. Meanwhile, it was significantly higher in intestinal-type and well/moderately differentiated gastric carcinoma than in diffuse and poorly differentiated one ($P < 0.05$ and 0.01). Conclusion: The proapoptotic gene Bax can express to various degrees in most kinds of the gastric carcinomata and may take part in the apoptosis of the gastric carcinoma. The expression of Bax might be associated with the occurrence of intestinal-type gastric carcinoma and the differentiation of the gastric carcinoma.

Key words stomach neoplasm; Bax; apoptosis; immunohistochemistry

周围神经对缓慢牵伸的生物学适应性机制研究

A study on the mechanism of biological adapatation of peripheral nerve during limb lengthening in rabbits

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周围神经对牵张应力非常敏感,动物活体测试表明急性牵伸 6%~ 8%时即可出现神经受损, 12%~ 15%时神经的损害则不可逆。然而,近年临床观察表明:每日 1 mm的延长速度在准确穿针牢稳固定的条件下,即使延长率远远超过周围神经的生理弹性限度也不造成明显的临床神经损害。本研究探讨周围神经对缓慢牵伸延长的生物学适应性机理。

选用日本大耳白兔 90只,采用胫骨延长模型,按延长率分为 10% , 20% , 30% , 40% 4组。从组织学,超微结构,血流动力学,周围神经屏障功能,电生理学及生长相关蛋白 (GAP-43) mRNA原位杂交技术的角度探讨肢体延长过程中胫后神经及相应的脊髓前角和脊神经节神经细胞对缓慢牵伸的生物学反应。

正常非等张时神经纤维在束膜内呈波浪状走行,随着肢体延长幅度的增加,神经纤维逐渐变直。超过 10%的肢体延长即已超过神经的生理弹性限度,并开始造成神经的损害,形态上表现为脱髓鞘病变为主的病理损害,电生理学表现为潜伏期 (Lat)的延长及峰值 (Amp)的下降,原位杂交显示脊髓前角及脊神经节神经细胞 GAP-43mRNA表达的逐渐增加。随着肢体延长幅度的增加,上述损害逐渐明显,范围更加广泛。与此同时,周围神经也不断的再生修复。在缓慢牵伸肢体延长过程中神经的血循环可逐渐代偿,束膜屏障及毛细血管屏障功能也保持完好。

周围神经弹性限度内的延长是通过神经旁膜 (Paraneurium)的滑动机制使牵张应力上下传导,均匀的分布于神经干;以及束膜内波浪状的神经纤维在牵张应力下的逐渐伸直来适应性代偿的。超过生理弹性限度的缓慢牵伸虽可造成周围神经广泛的病理损害。但延长过程中周围神经营养血管的代偿机制,神经再生通道的连续性,以及完备的束膜屏障和毛细血管屏障,仍继续维持着神经再生良好的微环境和血供。此外,每日 1 mm的肢体延长速度明显的小于 1~ 1.5 mm/d的神经再生速度,使周围神经在受到不断微损害的同时得以同步的再生修复。作者认为周围神经能耐受超过其弹性限度的缓慢牵伸延长,其适应性机制是通过对反复微损害的同步再生修复来实现的。

关键词 肢体延长;周围神经;兔

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