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Expression of anion exchanger mRNA in brains of rats with chronic hypoxia and hypercapnia

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Abstract After three models of hypoxia, hypoxia with hypercapnia and chronic acidosis were established in rats by pouring the mixed gases into the chamber, the distribution and changes of anion exchanger 3 (AE_3) in the brain of the rats were studied with *in situ* and dot blot hybridization using digoxigenin-labelled cDNA probe. It was found that: (1) AE_3 and mRNA distributed widely in the brain tissue, especially in pontine gray matter where the respiratory center was located. (2) The relative contents of AE_3 and mRNA in the brains of experimental rats were significantly lower than those of the controls. (3) The relative contents of AE_3 and mRNA in the brains of rats with chronic hypoxia and hypercapnia and chronic respiratory acidosis were also significantly lower than those in rats with chronic hypoxia ($P < 0.01$) but there was no significant difference between chronic hypoxia and hypercapnia and chronic respiratory acidosis. These findings suggest that AE_3 may play an important role in the occurrence of respiratory failure and subsequent pulmonary encephalophathy.

Keywords hypoxia; hypercapnia; anion exchanger; pulmonary encephalophathy; chloride channel; rat

骨肉瘤的临床病理与分子病理学研究—— 影响临床预后因素的探讨及 p53 抑癌基因的改变

A clinical and molecular pathological study on human primary osteosarcoma—— prognostic factor and p53 gene changes

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作者从临床病理方面对人骨肉瘤的临床预后影响因素和分子生物学方面对 p53抑癌基因与临床病理的联系及其在骨肉瘤发生、发展中的作用进行了较为系统的研究。采用了组织学、组织化学、免疫组织化学及 PCR-SSCP银染技术,从多层次、多角度探讨了判断预后的模型及 p53基因的改变,强调了肿瘤的生物学及分子生物学特点与临床病理间的联系,获得如下结论:

(1)单因素分析影响骨肉瘤患者临床预后的因素中,有显著统计学意义的有:患者的性别、年龄、肿瘤的发生部位,肿瘤的大小、DNA倍体状态及含量测定、AgNORs计数、肥大细胞计数及 PCNA、KiS1免疫组化染色半定量分级。而骨肉瘤的组织学分型及核丝分裂像计数对预后的判断意义不大。

(2)多元直线回归和多元逐步回归,得到一个有非常显著意义的判断预后模型。对该模型有明确影响的因素依作用大小依次排为:DNA倍体状态及 DNA含量;AgNORs计数;肿瘤大小;肿瘤发生部位;患者年龄;患者性别。

(3)判断骨肉瘤预后模型中最好的因素为 DNA倍体状态及 DNA含量指数。其含量指数在同一肿瘤中的值是恒定的,不依组织学的改变而变化。精确测量肿瘤直径在临床上也是必要的。而 PCNA、KiS1免疫组化检测肿瘤细胞增殖活性及半定量分级仍不失为判断预后的简便、经济快捷的手段。

(4)96例有随访资料的人骨肉瘤标本中,p53蛋白阳性率为 29.17%,p53蛋白阳性患者的半年生存率明显低于 p53蛋白阴性患者。p53蛋白阳性与骨肉瘤组织学分型间无明显关系。银染 PCR-SSCP方法检测 p53基因 5-8外显子点突变,得到 SSCP阳性率为 23.96%。SSCP阳性患者的半年生存率明显低于 SSCP阴性患者。SSCP阳性与骨肉瘤组织学分型无明显关系。提示 p53基因改变在人骨肉瘤的发生、发展中起某种作用。而 p53蛋白表达及 p53基因点突变有可能成为判断人骨肉瘤恶性程度的指标。

(5)人骨肉瘤中 p53基因点突变以第 7外显子多见。

(6)SSCP和免疫组化的阳性符合率为 82.14%,具有较好的一致性。免疫组化不失为一种简单、经济的检测 p53基因点突变的方法。

关键词 骨肉瘤;预后;p53基因
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