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论文

邻脂苯芥对家兔Brown-Pearce癌的疗效及对细胞核分裂的影响

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摘要:

邻脂苯芥实验室编号为AT-581,是一个新的氮芥化合物,化学名为:邻双(2-氯乙基)氨甲基-苯丙氨酸二盐酸盐.本工作进一步研究了该药对家兔Brown-Pearce癌的疗效和对细胞核分裂及一般形态的影响.获得的结果如下:(1)以Brown-Pearce癌组织匀浆或瘤块接种于家兔眼前房,3天后开始以AT-581治疗.静脉注射0.7毫克/公斤时,肿瘤重量抑制率为48-78%,疗效非常显著.眼内注射0.015,0.03和0.06毫克/每眼时,肿瘤重量抑制率分别为57,61和63%,与对照组比较,差异非常显著。(2)用AT-581 0.7毫克/公斤/天静脉注射3和7天,能使癌细胞核分裂指数减低,对分裂象各期也有抑制作用.其中以注射7天组的作用最明显.癌细胞一般形态的改变包括细胞排列紊乱和体积缩小,核固缩、破裂和出现癌组织的大批坏死.(3)一次静脉注射AT-581,小剂量时先呈现刺激细胞生长的作用,继之出现强烈的抑制效能.大剂量时一开始就出现核分裂抑制,各期分裂象明显下降和细胞体积缩小.

关键词:

THERAPEUTIC EFFECT OF AT-581 ON THE BROWN-PEARCE CARCINOMA IN RABBITS AND ITS INFLUENCE ON MITOSIS OF THE TUMOUR CELLS

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Abstract:

o-[Bis-(2-chloroethyl)-aminomethyl]-phenylalanine dihydrochloride, designed as AT- 581, is a new derivative of nitrogen mustard.In this paper we have studied further the therapeutic effect of the drug on the Brown-Pearce carcinoma and its influence on mitosis of the carcinoma cells. 1.In rabbits, the Brown-Pearce carcinoma was transplanted into the anterior cham- bers of the eye by using the suspension or tumour piece inoculation method, and the treatment with AT-581 was started on the 3rd day after the inoculation.It was found that intravenous injections of 0.7 mg/kg could markedly inhibit the tumour growth, the degree of inhibition being about 48-78%. When the drug was injected intraocularly at the dosages of 0.015, 0.03 and 0.06 mg/eye, the therapeutic effect was also significant. 2. When AT-581 was injected intravenously for 3 or 7 days to rabbits bearing the Brown-Pearce carcinoma, the mitotic index (counting 3000 cells) was decreased signifi- cantly and the percentages of all four stages of mitosis were depressed, among them the metaphase being affected most strikingly. Other morphologic changes such as disarrange- ment and pyknosis of the tumour cells, coagulation and fragmentation of the nuclei, and necrosis of the tumour tissue were also noticed. 3.A single intravenous injection of a small dose of AT-581 produced firstly a stimulating action on the growth of tumour cells, and then a remarkable inhibitory effect. Larger doses of the drug caused immediate mitotic inhibition including a decrease of mitosis in all four stages, and a pyknosis of the tumour cells.

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