

论文

小鼠各种组织细胞对N-甲酰溶肉瘤素敏感性的比较——病理形态和细胞计数的研究

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摘要:

本实验使用形态学方法在切片上计算细胞数以比较N-甲酰溶肉瘤素对小鼠各种器官所引起病变的发展过程,并从数量上去衡量各种细胞对药物的敏感性。结果发现小鼠腹腔内注射N-甲酰溶肉瘤素150毫克/公斤后,病变主要见于骨髓、胸腺、淋巴结、脾脏、小肠、大肠和睾丸。各种组织的病变发展过程不同,一般在给药后2—4天最为严重。在敏感的器官中,不同类型组织细胞对N-甲的敏感性有很大差别,最敏感的是睾丸的精原细胞和骨髓的嗜酸性粒细胞。

关键词:

A Comparison of the Susceptibility of Various Normal Tissue Cells in Mice to the Action of N-Formylsarcosylsine——A Pathological and Quantitative Histological Study

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Abstract:

The pathological effects of N-formylsarcosylsine (N-F) in the mouse were investigated. At the dose level of 150mg/kg (i. p.), lesions were found in the bone marrow, thymus, lymph nodes, spleen, intestine, and testis, while other organs including the heart, lungs, kidneys, brain, etc. remained unchanged morphologically. The changes of the above organs might appear in 4—8 hours after administration of N-F but did not become evident until 24 hours later, and then reached their maximum in 2—4 days. Regeneration began on the 5th to 7th day in survived animals. For the purpose of comparing the susceptibility of various tissue cells to the destructive action of N-F, various dose levels of N-F were chosen, and the following kinds of tissue cells were counted in a given number of microscopic fields: neutrophil granulocytes, eosinophil granulocytes, erythropoietic cells, and megakaryocytes in the bone marrow; lymphocytes in the thymus; epithelial cells and Paneth cells in the crypts of Lieberkuehn of the small intestine; and spermatogonia of type A and B in the testis. According to the cell counts of various dosage groups, the 50 per cent injurious dose (ID<sub>50</sub>) of N-F for different tissue cells was calculated. It was found that the susceptibility of various tissue cells to the action of N-F was quite different. Type A spermatogonia, type B spermatogonia, and eosinophil granulocytes were most sensitive, and the ID<sub>50</sub> was 25.2, 17.5, and 32.7mg/kg, respectively. Erythropoietic cells and lymphocytes were also sensitive, the ID<sub>50</sub> being 64 and 151 mg/kg, while epithelial cells of the Lieberkuehn's crypt and neutrophil granulocytes of the bone marrow were less sensitive. Megakaryocytes and Paneth cells were most resistant, the ID<sub>50</sub> was higher than 300 mg/kg. It appears that the quantitative histological method presented in this paper is useful in studying toxic effects of antitumour drugs.

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