PP-172

Immunohistochemical investigations of expression gene p53 in osteosarcoma

D. Polatova, **K. Abdikarimov**, M. Gikdiyeva, U. Islamov, S. Urunbaev, B. Sultonov, R. Davletov
National Cancer Center, Tashkent, Uzbekistan

Introduction: Our research was devoted to study the expression of molecular-biological markers of differentiation, proliferation and apoptosis in osteosarcoma, determining by immunohistochemical methods.
Methods: Research on expression mtp53 was conducted in 215 patients with osteosarcoma by immune-histochemical methods with using the sets of the firm Dako.
Results: The analysis allowed to establish that hyper expression mtp53+ occurs in OS patients with low stage of tumour differentiation (G_3) 13 times more often than with high level tumour differentiation (90,1±2,0% and 9,9±2,0%; p<0,05). It is observed that the tendency of connection of positive expression mtp53 with prevalence of process (T2-3). However, with 3-4 clinical stages of osteosarcoma associative connection was reliable, the frequency of occurrence in patients with these stages was higher than 4 times in comparison with 1-2 stages (70,5% and 85,7% in comparison with 20,0% and 47,8%; p<0,05).
The patients with big volume of tumour (more than 500sm3) positive expression mtp53 occurred 1,5 times more often than in patients with less size of tumour (260sm in patients with the absence of this gene expression). Chondroblastic histological version (41,4%) and osteolytic rontgenological form (43%),which proceeds with more malignant phenotypes and also more (p<0,05) often occurred in patients with positive expression mtp53. It is known, that the low level of spontaneous or induced apoptosis of tumour cells may be the base of the development of resistance to anticancer therapy.
Thus, in systematic chemotherapy tumour decrease was observed to 75% only in 38,9% patients with positive expression gene mtp53 in comparison with 61,1% patients with the absence of this mutation (p<0,05). Pathomorphism at I and II stages also more often occurred in patients with positive expression gene mtp53, but at III-IV stages more occurred in patients with absence of this mutation (71,4±4,1 and 81,3±3,5; p<0,05). Total regression of osteosarcoma was observed in 13, 7% patients, among them more than half (58, 8%) were with negative mtp53-phenotype (p<0,05). Partial regression of tumour was detected in majority (52,4%),to the presence of expression gene mtp53. Among these patients in 47,7% high and mean expression of mutant gene was detected. Without effect to conducted treatment and progression of tumour cells was established in 25% patients. Among them in 80,6% mutant form of gene53existed.
It is observed that the tendency to decrease the term of appearance of relapses and remote metastasis in patients with hyper expression of gene53. In this way up to one year relapses appeared in 9,7% patients , the presence or absence of mutant gene mtp53had not an associative relation. Median occurrence of relapse in this and in other group of patients was 9,5 months. But occurrence of relapses in the course of the following years was detected in 23,4% patients.
The period of relapses occurrence in patients with positive reactions to the presence of mtp53made up 19,6 months in comparison with 40,5 months in patients with positive expressions of mutant gene p53.
The appearance of remote metastasis up to one year was detected in 36,3% patients and following year in 63,7%. Occurrence median of remote metastasis up to one year had not reliable difference in groups with the presence and absence of mutant genep53expression. In subsequent period the median was 2, 2 times lower than in patients with the presence of positive mutant gene p53 expression than in patients who did not have the median (p<0,05). Life interval of the patients with the presence of mutant gene mtp53 was also lower 2 times than in patients with absence of this gene (28,8 months by comparison with 57,7 months correspondingly; median-28 and 52 months correspondingly).
Conclusion: Thus, the data showed that high and mean expression of mutant gene p53 in patients with osteosarcoma has associative relation with low degree of differentiation (G_3) tumour, 3 and 4 stages of tumour process, the size of tumour with low degree of pathomorphism (1 and 2), with chondroblastic histological versions and osteolytic rontgenological form, which proceed with more malignant phenotypes. We detected the decrease of the appearance term of relapses, remote metastasis and life interval in patients with hyper expression of gene mtp53.