

V.A.Tumanskiy  
M.D.Zubko

Zaporizhzhia State  
Medical University

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## HEPATOCELLULAR CARCINOMA: IMMUNOHISTOCHEMICAL CHARACTERISTICS OF APOPTOSIS AND CELL PROLIFERATION ACTIVITY

**ABSTRACT. Background.** Hepatocellular carcinoma which takes about 85% of primary liver cancer, is the most aggressive and prognostically unfavorable tumor. Current information about the level of apoptosis and cell proliferative activity of HCC are contradictory. **Objective.** To determine the apoptotic and proliferative activity of hepatocellular carcinoma of the liver by the immunohistochemically level of p53, caspase-3 and Ki-67 expression. **Methods.** Trepine biopsies of 53 patients with hepatocellular carcinoma were studied. **Results.** It was found that in 62.26% of cases the hyperexpression of nuclear p53 protein in cells was detected, in 20.75% of cases - a high level of expression of this protein, and in 16.98% of cases - a low level of p53 expression. The average area of p53-immunopositive cells was  $52,07 \pm 33,97\%$ . Simultaneously, in 47.16% of hepatocellular carcinoma it was detected a weak level of cytoplasmic expression of caspase-3, in 26.42% of the patients moderate level of expression of caspase-3 by hepatocellular carcinoma cells was determined, pronounced expression of caspase-3 was detected in hepatocellular carcinoma cells 26, 42%. Caspase-3-immunopositive cells occupied  $48,21 \pm 27,66\%$  of the total area of hepatocellular carcinoma. It is established that in the hepatocellular carcinoma prevailed moderate level of expression of Ki-67, which was observed in 66.04% of patients, in 22.64% it was high and in 11.32% of cases – it was low. Immunopositive Ki-67 cells occupied  $53,39 \pm 23,25\%$  of the total area of the tumor. **Conclusion.** Hyperexpression of nuclear p53 protein in hepatocellular carcinoma was associated with weak and low level of apoptosis of tumor cells and moderate level of their proliferation.

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✉ tumanskiy@zsmu.zp.ua

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