EFFECT OF THE ANTIPARASITIC DRUG MEBENDAZOLE ON CHOLANGIOCARCINOMA GROWTH

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Abstract. Mebendazole (MBZ) is an anthelmintic drug which inhibits tubulin polymerization and eventually causes apoptosis in target organisms. Antitumor activity of MBZ has been reported in various cancers. The aim of this study was to investigate the effect of MBZ on cholangiocarcinoma (CCA) cells in vitro and in vivo. MBZ reduced cell proliferation in the KKU-M213 cell line associated with a remarkable enhancement of caspase-3 gene expression and enzyme activity. Oral administration of MBZ slightly reduced the growth rate of subcutaneously xeno-grafted KKU-M213 in nude mice. The TUNEL assay showed an increase of apoptotic cell numbers in the xenograft tumor tissue of MBZ-treated mice. The data obtained in this study suggested that MBZ can suppress CCA cell proliferation via caspase-3 activated apoptosis. Further investigation of the antitumor effects of MBZ might support the use of MBZ as an alternative drug for CCA treatment.

Keywords: cholangiocarcinoma, mebendazole, apoptosis, caspase-3