

CHAPTER VII

CONCLUSION

Cholangiocarcinoma (CCA) is a highly malignant tumor of the biliary tree. At present, there are minimal opportunities for medical or surgical cure. Therefore, new methods of treatment are required. Apoptosis is a target to destroy cancer cells. TNF-alpha is an endogenous cytokine that induces apoptosis in many types of cancer. In this study, we investigated the effects of TNF-alpha on the resistance/sensitivity to apoptosis in cholangiocarcinoma cell lines (KKU-100, a poorly differentiated CCA and KKU-213, a well-differentiated CCA). Both cell lines expressed TNFR1 and TNFR2, receptors that respond to their ligand, TNF-alpha. We investigated the anti-tumor effects of TNF-alpha on cholangiocarcinoma by using MTT assay and DAPI staining methods. The results showed that treatment of 160 ng/ml TNF-alpha for 24 h to both CCA cell lines was not sufficient to induce cytotoxicity nor apoptosis. In conclusion, our results provide evidence showing that activation of TNF-alpha alone is unable to induce apoptosis in cholangiocarcinoma cell lines (KKU-100 and KKU-213).