CHEMOTHERAPEUTIC AGENTS AND p53 TUMOR SUPPRESSOR GENE: INTRINSIC CONNECTION WITH CANCER


Introdução: The cancer in its various forms is one of the biggest challenges for modern society. Scientific advances show the necessity of efficient and innovative treatments. From this perspective, genetic acts as source for new possibilities and advances in health care. The tumor suppressor gene p53, for various reasons, is called the "guardian of the genome", having involvement in the pathogenesis of human malignancies. The aim was to discuss the relationship between chemotherapeutic agents and p53 gene in cancer treatment in general. Materiais e Métodos: This is a literature review of descriptive character, and the search for information was performed on the basis of secondary data online BVS-BIREME, SciELO, Lilacs, PubMed and Cochrane. The sample of this review consisted of 25 studies, which were carried out critical readings and data collection to be discussed. Inclusion criteria were full papers in English or Portuguese published between 2010 and 2015, validated according to the degree of relevance of the subject matter. Resultados e Discussão: Neter et al. (2014) points out that the combined use of a cytotoxic agent gene therapy with p53 resulted in tumor cell death due to the induction of apoptotic pathways, with improvement in treatment compared to isolated use of the treatment on pancreatic cancer. Lehmann et al. (2012) conducted a study on the use of a drug that restores the transcription activity of the mutant p53 gene, where the tumor cells showed arrest in the cycle, increased apoptosis and higher regulation of p53 target genes in various patients, i.e., regulates proliferation and cancer cell death. Li et al. (2014) presented the use of intra-arterial infusion combined gene therapy and chemotherapy significantly increased the survival rate of patients with stage III oral cancer. Conclusão: Therefore, the intrinsic relationship of the p53 gene and chemotherapy requires more specific studies on the topic and other suppressor genes. An efficient and individualized treatment of cancer requires a deep understanding of genetic and epigenetic alterations in individual cases. These therapies combined actions discourse on the future of targeted cancer medicine to the quality of human life.