CELL VACCINES IN THE TREATMENT OF HEPATOCELLULAR CARCINOMA

Margine Rodica[1,2], Nacu Viorel[1,2]
[1]Departament of Anatomy and Clinical Anatomy, *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova.
[2]Laboratory of Tissue Engineering and Cell Culture, *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova.

Background. Hepatocellular carcinoma is one of the most common forms of cancer globally (sixth most common cancer, in 2020), and represents an essential cause of mortality worldwide (third most common cause of death from cancer etiology), with approximately 905,677 new cases and 830,180 deaths in 2020 without effective treatment methods. Thus, the use of cellular vaccines in the treatment of hepatocellular carcinoma is a new therapeutic approach, aimed at acting on cancer cells and destroying them, by inducing efficient cellular responses mediated by specific antibodies for antigens selectively expressed by the tumor.
Aim of study. Studying the effectiveness of cell vaccines in the treatment of hepatocellular carcinoma, to increase the quality and duration of life.
Methods and materials. This study is a review of the specialized literature of the last 10 years on the selected topic. Electronic databases were used: NIH (5), Google Academic (2), PubMed (3), Medscape (1).
Results. The use of cellular vaccines in the treatment of hepatocellular carcinoma is a new therapeutic vision used by researchers, which appeared and was implemented less than a decade ago, and which is in continuous development, due to the positive results it has. There are several types of cellular vaccines: based on peptides, dendritic cells, based on viral vectors, DNA, mRNA, which have proven their effectiveness following clinical trials on patients. Thus, a meta-analysis of 11 studies including 396 patients reported a cumulative clinical response rate of 15.4% and that DC vaccines were well tolerated, and the survival rate increased in sick patients.
Conclusion. Cell vaccines for the treatment of cancer show substantial potential for the successful management and possible prevention of mortality from hepatocellular carcinoma. Cell vaccines need to be researched and applied in practice, especially in clinical trials, to evaluate the safety, efficacy and clinical relevance of these vaccines in cancer patients, to achieve long-term control of tumors and a lasting remission.
Keywords: cellular vaccines, hepatocellular carcinoma, immunotherapy, dendritic cell-based vaccines, peptide-based vaccines, mRNA-based vaccines, DNA.