

Safety and clinical usage of Newcastle disease virus in cancer therapy.

ABSTRACT

Newcastle disease virus (NDV) is an avian virus that causes deadly infection to over 250 species of birds, including domestic and wild-type, thus resulting in substantial losses to the poultry industry worldwide. Many reports have demonstrated the oncolytic effect of NDV towards human tumor cells. The interesting aspect of NDV is its ability to selectively replicate in cancer cells. Some of the studies have undergone human clinical trials, and favorable results were obtained. Therefore, NDV strains can be the potential therapeutic agent in cancer therapy. However, investigation on the therapeutic perspectives of NDV, specially human immunological effects, is still ongoing. This paper provides an overview of the current studies on the cytotoxic and anticancer effect of NDV via direct oncolysis effects or immune stimulation. Safety of NDV strains applied for cancer immunotherapy is also discussed in this paper.

Keyword: Newcastle disease virus (NDV); Cancer immunotherapy; Oncolytic viruses.