Antitumor and immunoregulatory effects of astragalus on nasopharyngeal carcinoma in vivo and in vitro.


Source

Department of Otorhinolaryngology, Second Affiliated Hospital of China Medical University, Shenyang 110004, China. dawangmo@yahoo.cn

Abstract

This study was carried out to evaluate the effects of Astragalus on human nasopharyngeal carcinoma (NPC) viability and apoptosis and to investigate the mechanism of Astragalus in a NPC cell line (CNE2). Cell viability was measured using the MTT assay. CNE2 cells treated with Astragalus were stained with acridine orange/ethidium bromide and subjected to fluorescence microscopy. Bcl-2, Bax, caspase-3 and -8 were measured by western blotting. Rat NPC cells were used to establish a NPC model. Tumor weight, immune organ index and T lymphocyte subsets were employed to detect the immunoregulatory and antitumor effects of Astragalus after administration. Astragalus was effective in inducing apoptosis in CNE2 cells. Morphological changes associated with cell injury were found. Western analysis showed caspase-3, -8, and Bax protein levels were increased after Astragalus treatment, while the bcl-2 protein level was decreased. Astragalus increased the percentage of CD3(+) , CD4(+) T-lymphocytes, and the ratio of CD4(+) /CD8(+) . Astragalus also restored the immunological effects of DDP-induced immunosuppression. These findings suggest that the immunomodulatory and anticancer effects of DDP + Astragalus were better than those of DDP alone, and Astragalus could inhibit immunosuppression induced by DDP. The combination of CDDP + Astragalus could be
developed as an effective chemotherapeutic regimen in the treatment of nasopharyngeal carcinoma.

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