EXTRACT OF NATURAL MEDICINAL PLANT AS NEW POTENTIAL CHEMOTHERAPY AGENT FOR OVARIAN CANCER TREATMENT: PRECLINICAL STUDIES

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Abstract: Ovarian cancer is classified as the fifth most common forms of cancers and the first leading cause of death among all gynecological malignancies in women. The mortality rate is lower in African-American women than Caucasian women. The major contributor to high death rate of ovarian cancer is attributed to the absence of the specific symptoms and the lack of adequate screening of the tumors before they metastasize beyond the ovaries. Natural therapies, such as the use of plant derived extracts in cancer treatment with limited side effects are considered important. Therefore, the goal of this research was to determine the therapeutic mechanisms of a medicinal plant extract in the management of ovarian cancer. To achieve our goal, cell viability was determined by MTS assay using the spectrophometer. Cell cycle and cell apoptosis was measured by flow cytometry analysis. Data obtained from MTS assessment indicated that the plant extract significantly reduced the number of live cells in a dosedependent manner. Flow cytometry data demonstrated that plant extract induced cell cycle arrest and triggered apoptosis in treated cells compared to the control group. Taken together, our research finding demonstrated that plant extract derived from Asteraceae family destroys ovarian cancer cells by reducing the percentage of cell viability, inducing cell arrest at the G0/G1 checkpoint, and triggering apoptosis through phosphatidylserine externalization, and caspase3 activation. This result suggests that plant extract treatment may be a good anticancer candidate for the treatment of ovarian cancer.

Keys Words: Vernonia amygdalina, HTB-161 cells, ovarian cancer, apoptosis, chemotherapy

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