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Natural Plants and Cancer Therapy

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Abstract Cancer chemotherapy represents the cornerstone of management of a vast majority of neoplastic lesions. Adverse reactions of chemotherapy may affect the major body organs and represent deleterious health hazards for cancer patients. Recent studies are directed towards discovery of natural compounds of plant origin that have potential anticancer properties and may ameliorate the toxic effects induced by the traditional anticancer agents. This manuscript throws light on the potential role of the natural plants in cancer therapy.

Keywords: *natural, plants, cancer*

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The chemotherapeutic agents represent essential weapons for combating different types of malignancies [1]. However, the adverse effects induced by these agents represent an obstacle against their role in management of cancer [2]. These adverse effects depend mainly on the type of the drug itself and on the doses administered to the patients [3]. To decrease the dose and toxicity and increase the efficacy of the traditional chemotherapeutic agents, different lines were investigated [2]. Searching for natural agents that have potent anticancer properties may play a crucial role in amelioration of the adverse effects induced by the traditional anticancer agents [4].

The antitumor properties of a wide variety of plants had been investigated for centuries [3,5]. An example include podophyllotoxin and other compounds which were isolated from Podophyllumpeltatum and participated efficiently in the development of drugs used to treat carcinoma of the lung and testis [6]. The chemopreventive effects of the natural plants were widely investigated such as the effect of Asparagus racemosa in human epidermoid carcinoma, Erthyrinasuberosa in sarcoma, Anacardiumoccidentale in hepatoma, Euphorbia hirta in Freund virus leukemia, Boswelliaserrata in human epidermal carcinoma of the nasopharynx, and Nigella sativa in lung carcinoma [7]. These studies attributed the antitumor effects of these plants to their antioxidant and anti-inflammatory properties together with their ability to affect the cell cycle and induce the expression of the antiapoptotic agents [8]. The main advantage of these agents is that they are nearly devoid of adverse effect which gives them an important role in management of different types of cancer [9].

Recent studies reported that natural agents may sensitize the tumor cells to the effect of the chemotherapeutic agents, decrease the drug efflux or enhance accumulation of the chemotherapeutic agents in cancer cells, and promote the mechanisms by which the normal cells can repair the damage induced by the chemotherapeutic agents [10]. Using the traditional herbal medicine as a chemotherapeutic adjuvant was proven to improve the quality of life of cancer patients, ameliorate bone marrow depression, and possibly decrease the mortality rates [11]. However, the occurence of herbal–drug interactions may induce toxic events that may cause liver or kidney injury that necessitate taking great caution during new drug discovery and development [2]. Further studies are needed to look for herbal agents that can be used as an effective supplement for the chemotherapeutic agents to ameliorate any adverse effects and overcome resistance of cancer cells to chemotherapy.

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