OMICS International
conferenceseries.com

P K Goyal, J Cancer Sci Ther 2015, 7:8
http://dx.doi.org/10.4172/1948-5956.C1.051

Cancer chemopreventive potential of phytochemicals derived from medicinal plants

P K Goyal
University of Rajasthan, India

Cancer is the complex family of non-communicable diseases and leading cause of death in both developed and developing countries. Cancer cases worldwide are predicted to increase by 70% over the next two decades from 14 million in 2012 to 25 million new cases a year according to the World Health Organization. There has been a steady rise in the cancer deaths due to the adoption of unhealthy life style and environment pollution. Initiation of cancer is associated with both external (chemicals, radiation & environment) and internal (immune system defects, genetic predisposition viruses and hormonal imbalance) factors. The cancer preventive strategy i.e., chemoprevention is the threefold mechanism: To block or reverse carcinogenesis before the development of malignancy or to prevent disease progression and to prevent the occurrence of second primary tumors. A large number of epidemiological studies have reported an inverse relationship between dietary intake of fruits, vegetables and micronutrients and cancer incidence. There are a number of potentially cancer preventive ingredients in foods that can act at various stages in tumor initiation and promotion. This indicates that the ingredients of nutraceuticals can be a way to prevent cancer. The extracts of the various parts of some medicinal plant viz., Amla *(Emblica officinalis),* Rosmary *(Rosemary officinalis),* Methi *(Trigonella foenum graecum),* Sapthaparna *(Alstonia scholaris),* Bael *(Aegle marmelos),* Bhumi amla *(Phyllanthus niruri),* Jamun *(Syzgium cumini),* Gloe *(Tinospora cordifolium),* Kamrak *(Averrhoa carambola),* Linseed *(Linum usitatssimum)* Ajwain *(Trachyspermum ammi)* and Karonda *(Carissa carandas)* have been trialed in this laboratory for their anti-cancer and anti-oxidative potential in skin, liver and stomach cancer models against chemical induced carcinogenesis. The results from the present investigation indicate that most of these plants extract have the potentiality to reduce the cancer burden in the form of tumor size, tumor weight, tumor number, tumor yield and by increasing the latent period of tumor appearance. Further, such plant extracts decrease the oxidative stress (LPO) but increase the antioxidant status of enzymes (GST, CAT GSH, SOD) in various biological tissues. The study advocates the use of various plants components as the dietary ingredients for the preventive and therapeutic management of cancer.

Biography

P K Goyal is a Professor and Head in the Department of Zoology, Chief of Radiation & Cancer Biology and Coordinator of DST-PURSE program, UGC-CAS program & PG Course of Microbiology at the University of Rajasthan, India. He has served as the Director, PG School of Life Sciences during 2011-2014. He is honored as the President of Indian Society of Radiation Biology (ISRB) and President of Indo Global Health Care Research Foundation (IGHCRF). He has 33 years of teaching and research experience. He is the Member of Advisory Committee of Getting to know cancer, a Canadian based organization for phytochemical research on Cancer management and Councilor of Asian Congress on Radiation Research (ACRR), Japan.

pkgoyal2002@gmail.com

Notes: