

International Meeting on

TRADITIONAL & ALTERNATIVE MEDICINE

July 23-24, 2018 | Osaka, Japan

Preclinical studies with phytochemical -adjuvants in radiotherapy of tumour

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Cancer is one of the most dreaded diseases of mankind and it is considered as an adversary of modernization and the pattern of socio-economical life. Multidisciplinary scientific investigations are making best efforts to combat this disease, but a perfect cure is yet not realized in modern medicine. Recently, a greater emphasis has been given towards the researches on complementary and alternative medicine that deals with cancer management. Several studies employing methodologies of modern medicine have been conducted on a multitude of herbs of ethnobotanical importance. Ayurveda, the traditional Indian system of medicine, has been successful from ancient times in using natural drugs, mostly preparations using indigenous medicinal plants like *Andrographis paniculata*, *Curcuma longa*, *Coscinum fenestratum*, *Rubia cordifolia*, *Ocimum sanctum*, *Plumbago zeylanica*, *Semecarpus anacardium*, *Glycyrrhiza glabra*, *Tinospora cordifolia*, *Catharanthus roseus*, *Aegle marmelos*, *Centella asiatica* etc, in preventing or suppressing various tumors using several

lines of treatment. Thousands of herbal and traditional compounds are being screened worldwide to validate their use in cancer therapy. The phytochemicals and extracts can also be used as adjuvants with modern therapeutic practices so as to mitigate the toxicities and undesirable side effects of modern medicines. Studies have demonstrated at in animal models that the toxicities of common anticancer drugs such as doxorubicin and cisplatin. Radiotherapy is the most common modality of treatment for several tumours. In this modality of treatment one of the problems encountered is the higher sensitivity of nearby normal tissues which needs to be protected from radiation injury while eradicating the tumour. Several extracts of medicinal plants and the medicinal mushroom *Ganoderma lucidum* find beneficial application in this situation, as revealed in studies with animal models. The talk will summarise some of these studies and discuss the possible mechanisms.

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