Gary D Stoner et al., J Cancer Sci Ther 2014, 6:10
http://dx.doi.org/10.4172/1948-5956.S1.032

OMICS Group Conferences
Accelerating Scientific Discovery

4th World Congress on
Cancer Science & Therapy
October 20-22, 2014 DoubleTree by Hilton Hotel Chicago-North Shore Conference Center, USA

Chemoprevention of gastrointestinal tract cancers with berries

Gary D Stoner, Li-Shu Wang and **Yi-Wen Huang**
Medical College of Wisconsin, USA

We examined the ability of freeze-dried berries to prevent G.I. tract cancers in animals and humans. Most studies used black raspberries (BRBs), due to their high antioxidant potential and high content of anthocyanins and fiber. In rodent studies, the consumption of BRB powder, at 2.5, 5 and 10% of a synthetic diet, resulted in a 40-70% inhibition of carcinogen-induced cancer in the rat esophagus and colon, and the spontaneous development of intestinal tumors in mice. Mechanistically, BRBs inhibit proliferation, inflammation and angiogenesis and stimulate apoptosis and differentiation, and protectively modulate genes in multiple signaling pathways. The most active inhibitory constituents in BRBs are the anthocyanins. A Phase I trial showed that BRBs are well tolerated in humans at oral doses that elicit chemopreventive effects in rodents. The oral administration of BRB powder (45g/day) to 20 Barrett's esophagus patients for 6 months led to reductions in oxidative stress, but minimal effects on the lesion. Oral administration of strawberry powder (60g/day) to 37 Chinese patients with esophageal dysplasia led to histologic regression of ~80% of mildly dysplastic lesions and reduced levels of iNOS, COX-2, and phospho-NF-κB-p65 proteins. Treatment of 20 colorectal cancer patients with BRB powder for an average of 3 weeks led to reduced cell proliferation and demethylation of suppressor genes in the Wnt signaling pathway. Treatment of patients with familial adenomatous polyposis with rectal BRB suppositories caused a 36% regression of rectal polyps. These trials indicate that berries have significant promise for chemoprevention of esophageal and colon cancer in humans.

Biography

Gary D Stoner completed his PhD at the University of Michigan in 1970, conducted Post-doctoral studies at the University of California-San Diego and, in 1992, joined the Department of Preventive Medicine at Ohio State University as Lucius Wing Chair in Cancer Etiology and Prevention. He has Chaired the NIH Chemo/Dietary Prevention and the ACS Nutrition and Environment Study Sections. He is Professor of Medicine at the Medical College of Wisconsin and is conducting additional clinical trials of berries for the prevention of esophagus and colon cancer. He has more than 300 peer-reviewed publications. 55 book chapters and has edited 4 books.

gstoner@mcw.edu