Analysis of lipid peroxidation on cytoprotective effect of curcumin in perchloroethylene induced cytotoxicity.

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ABSTRACT

Contemporary medicine is in general conducted within health care systems. Legal, credentialing and financing frameworks are established by individual governments, augmented on occasion by international organizations. The characteristics of any given health care system have significant impact on the way medical care is provided. Apart from the modern system of medicine, traditional and indigenous medicinal systems like Ayurvedic and Unani systems are in practice throughout the country. Turmeric (Curcuma longa) is extensively used as a spice, food preservative and colouring material in India, China and South East Asia. It has been used in traditional medicine as a household remedy for various diseases, including biliary disorders, anorexia, cough, diabetic wounds, hepatic disorders, rheumatism and sinusitis. Curcumin (diferuloylmethane), the main yellow bioactive component of turmeric has been shown to have a wide spectrum of biological actions. Curcumin is the principle "curcuminoid" (a polyphenol compound) of the Indian spice turmeric. The polyphenols give it, its distinctive yellow colour. It has served as a treatment for jaundice, menstrual difficulties, hematuria, hemorrhage, colic, and flatulence. In modern times, research has focused on Curcumin's antioxidant, anti-inflammatory, anticarcinogenic, and antimicrobial properties, and on its use in cardiovascular disease, gastrointestinal disorders, and as a treatment for the liver. Lipid peroxidation is a well-defined mechanism of cellular damage in both animals and plants that occurs in vivo during aging and in certain disease states. In our study experimental animals were divided into three groups. Group I served as control (received sesame oil by oral gavage) and group II as PER treated (PER along with sesame oil) and group III treated with (PER and Curcumin). The animals were sacrificed and various cellular constituents and enzymes were assayed in liver and kidney, in which the group II showed significant changes in the level of antioxidants, lipid peroxidation and in histopathology. Our current study indicates that animals treated with curcumin showed reduced lipid peroxidation compared with Perchloroethylene treated animals and are well tolerated at a very high dose without any toxic effects. Thus, curcumin have the potential for the development of modern medicine for the treatment of various diseases.

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