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Hepatotoxicity of green tea: an update.

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Abstract

Green tea (GT), obtained from the leaves of *Camellia sinensis* (L.) Kuntze (Fam. Theaceae), is largely used for its potential health benefits such as reduction in risk of cardiovascular diseases and weight loss. Nevertheless, it is suspected to induce liver damage. Present work reviews the hepatic adverse reactions associated with GT-based herbal supplements, published by the end of 2008 to March 2015. A systematic research was carried out on PubMed, MedlinePlus, Scopus and Google Scholar databases, without any language restriction. Moreover, some accessible databases on pharmacovigilance or phytovigilance were consulted. The causality assessment was performed using the CIOMS/RUCAM score. Nineteen cases of hepatotoxicity related to the consumption of herbal products containing GT were identified. The hepatic reactions involved mostly women (16/19); the kind of liver damage was generally classified as hepatocellular (16/19). The causality assessment between consumption of herbal preparation and hepatic reaction resulted as probable in eight cases and as possible in eleven cases. In seven cases, patients used preparations containing only GT, while twelve reactions involved patients who took multicomponent preparations (MC). The reactions induced by GT had a generally long latency (179.1 ± 58.95 days), and the outcome was always resolution, with recovery time of 64.6 ± 17.78 days. On the contrary, liver injury associated with MC had a shorter latency (44.7 ± 13.85 days) and was more serious in four cases that required liver transplantation and, when resolution occurred, the recovery time was longer (118.9 ± 38.79). MC preparations contained numerous other components, many of which are suspected to induce liver damage, so it is difficult to ascribe the toxicity to one specific component, e.g., GT. Present data confirm a certain safety concern with GT, even if the number of hepatic reactions reported is low considering the great extent of use of this supplement. The mechanism of GT hepatotoxicity remains unclear, but factors related to the patient are becoming predominant. A major safety concern exists when GT is associated with other ingredients that can interact between them and with GT, enhancing the risk of liver damage. Patients should be discouraged from using herbal or dietary supplements containing complex mixtures and should be encouraged to use herbal and dietary supplement possibly under supervision of healthcare professionals.

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