

Poster Session 9

Submission ID: 1199

GINKGO BILOBA: PHARMACOLOGICAL PROPERTIES AND DRUG INTERACTIONS

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ABSTRACT

Ginkgo biloba, also known as a fossil tree, is the oldest living tree and leaf extracts have been used for centuries in the treatment of various diseases. In Chinese medicine tea is prepared for asthma and bronchitis treatment. In Germany and other European countries, it is frequently prescribed in form standard tablet or capsule form. Its major components are flavonoids, proanthocyanidins, terpene lactones including ginkgolide A, B, C and sesquiterpene bilabolides. The standardized Ginkgo extract contains 22-27% flavone glycosides and 5-12% terpene lactones which are main active ingredients. Flavonol glycosides, a component of the ginkgo leaf, improves blood circulation. Ginkgolide-B is a platelet activating factor antagonist. The main indications for Ginkgo are primary degenerative dementia, vascular dementia, absent state, confusion, lack of energy, fatigue, decreased physical performance, depressive mood, anxiety, vascular and dizziness and ear tinnitus, relieving the symptoms caused by the peripheral arterial occlusive disease. The most important interaction with Ginkgo biloba is the risk of spontaneous bleeding that can be observed when used with anticoagulants. A number of clinically significant cases of bleeding have been reported. A 70-year-old man started using 40 mg of standardized Ginkgo biloba extract twice a day. After one week he complained of recurrent blurred vision attacks in his right eye. He went to the clinic 2 days later and a red color change in the cornea was noticed. The only medication the patient used was a single dose of 325 mg aspirin, which is prescribed after coronary artery bypass surgery since 3 years. The patient did not have any eye trauma, ischemia or vascular occlusion in the past. The physical examination was entirely normal except for a fine stream of blood oozing down from the 12 o'clock position of the margin of the iris into the inferior angle, where a layering of blood was seen on gonioscopy. The patient stopped taking Ginkgo's extract but continued aspirin treatment. It has been reported that the bleeding did not recur during the three-month follow-up period. The injection of Ginkgo biloba extract to increase microcirculation due to anticoagulant effect with sodium aescinate obtained from horse chestnut seed approved by Chinese Food and Drug Administration for postoperative oedema treatment has resulted with severe nephrotoxicity. It has been reported that fetal intracerebral hemorrhage develops in a patient using nonsteroidal anti-inflammatory agent containing ibuprofen with Ginkgo biloba extract. The effect of Ginkgo biloba (daily 100 mg extract) was investigated with a placebo-controlled cross-blind study involving 21 patients receiving prolonged warfarin treatment, and it turned out that INR value did not change. Experimental studies show that Ginkgo biloba accelerated the onset of ototoxicity caused by amikacin and increases ototoxic adverse effect. Ginkgo biloba also increases the extrapyramidal adverse effects of haloperidol. Ginkgo biloba has been reported to cause priapism in a patient receiving risperidone treatment. The α -adrenergic properties of risperidone cause

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