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Tissue-protective activity of *Cotinus coggygria* ethyl acetate extract in a mouse model of breast carcinoma

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Abstract

Herbs are well known as valuable sources of potential therapeutic agents in different diseases, including cancer. *Cotinus coggygria* (smoketree) is widely used as antiseptic, anti-inflammatory and hepatoprotective remedy. Our preliminary studies showed that the ethyl acetate extract from *C. coggygria* has an interval of safety doses that can be applied to a laboratory mice *per os* without any harmful effects. The *Aim* of the present study was to evaluate the possible tissue-protective effects of the oral application of ethyl acetate extract from *C. coggygria* in a mouse model of Erlich's mammary gland carcinoma. For the purpose, we used albino mice, divided into 4 groups (3 animals each). All the animals were treated daily *per os* with 30mg/kg/d extract of *C. coggygria* for 10 days. Then, the animals of groups 1 and 2 were inoculated with Ehrlich's tumor cells i.p. to develop the ascite form of the disease whereas those of groups 3 and 4 were injected sub-cutaneously to develop the solid form of Ehrlich's tumor. Additionally, the animals of groups 1 and 3 were treated with the above extract during the whole experiment, while those of groups 2 and 3 were not treated. After 10 days, smears of the ascite and tissue sections from solid tumors, liver, spleen, kidneys, pancreas, small intestine and brain were obtained and stained with H&E. They were examined microscopically for the presence of morphological signs of necrosis or destruction, tumor metastases and inflammatory reactions. *Results:* The organs of the animals with developing tumors had different pathological changes, provoked by developing mammary gland cancer, less severely pronounced, especially in the groups, treated with *C. coggygria*. *Conclusion*: Ethyl acetate extract of *C. coggygria* has a tissue protective role when given per os and may mitigate the pathomorphological changes, in the organs studied.