

عنوان مقاله:

Embryonic Vascular Toxicity of Calotropis Procera; Evaluation of Early Anti-Vasculogenic Property and Molecular Aspects Using A Chick's Extra-Embryonic Membrane Model

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خلاصه مقاله:

Background: Calotropis procera Aiton (C. procera) is used in folk medicine to cure various diseases. However, the use of herbs in human medicine is sometimes associated with adverse effects. Chick embryo is a preclinical model relevant to assess adverse effects of drugs and herbs. Therefore, the current study aimed to assess the alteration of vascular branching patterns in the chick's extra-embryonic membrane following C. procera treatment. Besides, the alteration in molecular cues involved in early embryonic vasculogenesis, such as vascular endothelial growth factor A (VEGF-A) was also quantified. Methods: In an experimental study, 30 fertile chicken eggs were divided into three equal treatment groups; sham control, and C. procera-treated groups whose cases were treated with C. procera extract at doses of 50 or 100 mg per kg of egg weight. Results: Quantification of extra-embryonic membrane vasculature showed that anti-vasculogenic effect of the herbal extract was revealed by a reduction in vessels area, total vessels length, vascular branch and increased lacunarity. The alterations were made in a dose-dependent manner. The relative expression levels of VEGF-A mRNA was also decreased in the herbal-exposed extra-embryonic membrane. Conclusion: Concerns about the side effect of C. procera during pregnancy were confirmed by data presented in this study. We concluded that altered early vascular development and gene expression might eventually lead to developmental defects in embryo following C. procera consumption. Therefore, the use of this herb must be limited at the time of fetal growth especially at the dosage higher than 50 mg per kg.

کلمات کلیدی:

Calotropis procera, Embryo, Fetus, Vasculogenesis, VEGF-A

لینک ثابت مقاله در پایگاه سیویلیکا:

