A235 Study of teratogenic effect of fenugreek extract on rat embryos

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There is a growing interest in understanding the biological effect of time-tested folk medicinal plants including the green leafy vegetables which supply minerals and vitamins to the diet. *Trigonella foenum-graecum* L. (fenugreek) is a dietary vegetable and there are reports concerning its antinociceptive effects in Iranian traditional medicine. Its seeds are also known for their carminative, tonic, antidiabetic, antineoplastic and restorative properties. Despite high nutritional value and the biological concerns, there is no report available regarding the effect of fenugreek extract on organogenesis. The present work is aimed to study possible teratogenic role of the fenugreek extract on rat embryos.
Following determination of the extract LD_{50}, twelve pregnant Sprague-Dawley rats (Weight 190-210 g) were allocated in four groups and treated intraperitoneally with a single dose of fenugreek aqueous extract throughout the period of organogenesis (day 10^{th} of pregnancy). The first three groups received concentrations of 0.8, 1.6 and 3.2 g/kg of the extract, respectively. The forth group received distilled water as the control. The pregnancy was terminated at the twentieth day and the embryos were studied for the mortality rate, parametric (body weight, biparietal diameter and crown-rump length) and non-parametric (microcephaly, microphthalmy, anophthalmy, hemimelia, phocomelia, amelia and exencephaly) factors. The embryos hepatocytes were also examined microscopically using the H & E staining.
The calculated LD_{50} of the extract, i.p., employing Probit analysis method was 4.1 g/kg. The results of this study showed that the mortality rate was increased in embryos of the extract-receiving rats in a dose-dependent manner. No morphological malformation was observed in the treated rat embryos although the biparietal diameter was significantly decreased in the group of animals receiving the highest dose of the extract ($p<0.05$). However, a light to moderate deformation was noticed by microscopic examinations of embryos liver; hepatocytes had lost their radiative and consequentive forms, the synosoides were dilated and blood cell classes were decreased in according to the extract concentration. Our findings, therefore, suggests that the aqueous extract of fenugreek, to some extent, may have teratogenic effect on rat embryo hepatocytes.

A236 Protective effect of *Spirulina maxima* on male mice from lead induced gametotoxicity

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Spirulina maxima is a blue-green alga of the Cyanophyceae family. It is used as a food supplement and food coloring. However, more attention has been recently paid to its possible therapeutic effects. *S. maxima* is rich in proteins, minerals, ω-3 and ω-6 polyunsaturated fatty acids, and antioxidant agents (1). This cyanobacterium has been now established as having reduced lead induced gametotoxicity of testes weight and cellular damage (2). In view of these findings, this research study was undertaken to evaluate the effects of this alga on the accessory sex organ weights and sperm profile when damaged by lead. Male NMRI mice aged 6 weeks old were divided into 7 groups: 1) untreated controls; 2) vehicle controls (Tween); 3) 0.25% Pb; 4) 0.5% Pb; 5) *S. maxima* 800 mg/kg; 6) *S. maxima* 800 mg/kg + 0.25% Pb and 7) *S. maxima* 800 mg/kg + 0.5% Pb. All mice were given their corresponding doses *per os* for 6 weeks. After this period of treatment the mice were decapitated. The left testis, epididymis, prostate and seminal vesicles were weighed. The right cauda epididymis was dissected and excised in saline solution to release the sperm. The results indicated that *S. maxima* was effective in exerting a protective effect against the lead induced damage on sperm concentration, motility and shape.
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