Azza Ahmed Attia et al., Madridge J Food Technol. 2018
http://dx.doi.org/10.18689/2577-4182.a2.002

Ginger Causes Subfertility and Abortifacient in Mice by Targeting both Estrous Cycle and Blastocyst Implantation without Teratogenesis

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Due to renowned medicinal properties, Ginger rhizomes (Zingiber Officinale Roscoe) used traditionally in the treatment of arthritis, rheumatism, muscular aches, constipation, indigestion, hypertension, dementia, fever, and infectious diseases. As an antiemetic, Ginger is consumed by approximately 80% of pregnant women to treat nausea and vomiting of early pregnancy.

Purpose: The aim of this study is to evaluate the impact of ginger extract on the estrous cycle and implantation in female mice.

Study design and methods: Four experimental episodes were identified. One considered the main study of outcomes and lasted 90 days; one lasted 35 days and considered the estrous cycle; while the third and fourth intended antifertility and abortifacient and continued 20 days for each. Mice dosed Ginger orally at 0, 250, 500, 1000 or 2000 mg/kg bw/day (GNC, GN1, GN2, GN3, GN4, respectively).

Results: GN3 and GN4 dams showed maternal toxicity. High dose significantly reduced the number of live fetuses and increased fetal death and resorption. Mice treated with 2000 mg/kgbw/day displayed significant decreases in implantation sites. At a dose of 2000 mg/kg bw/day, Ginger prolonged the length of estrous cycle with a significant decrease in the duration of diestrous-metestrus (luteal) phase, prolonged pro estrus-estrus (ovulatory) phase and reduced the number of cycles as well. Therefore, Ginger impairs the normal growth of corpus luteum because of progesterone insufficiency during early pregnancy. The observed-adverse effect dose set at 2000 mg/kgbw, but no-observed-adverse-effect dose set at 250 and 500 mg/kgbw.

Conclusions: These findings suggest that Ginger can disrupt the estrous cycle and blastocyst implantation without teratogens.

Keywords: Ginger; Estrous cycle; Implantation; Fertility; Fetus; Resorption.

Biography:

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