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Assessment of Fertility, Implantation, Andestrous Cycle Quality of Female Mice Induced by Ginger

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Ethnopharmacological relevance: Due to renowned medicinal properties, Ginger rhizomes *(Zingiber officinale* Roscoe) used traditionally in the treatment of arthritis, rheumatism, muscular aches, constipation, 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.

Aim of the study: This study designed to evaluate the impact of ginger extract on the estrous cycle and implantation.

Materials 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, 11.4, 22.9, 34.3or 51.4 mg/kgbw/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 51.4 mg/kgbw/day displayed significant decreases in implantation sites. At a dose of 51.4 mg/kgbw/day, Ginger prolonged the length of estrous cycle with a significant decrease in the duration of diestrous-metestrus (luteal) phase, prolonged proestrus-estrus (ovulatory) phase and reduced the number of cycles as well. Therefore, Ginger impair the normal growth of corpus luteum because of progesterone insufficiency during early pregnancy.The observed-adverse-effect dose set at 51.4 mg/kgbw, but no-observed-adverse-effect dose set at 11.4 and 22.9 mg/kgbw.

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