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In vivo Antimicrobial Activity of Ozonized Theobroma Oil Ovules against Candida albicans

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Abstract

Background: Candidiasis is a contamination brought about by a yeast molded organism which incorporates Candida sexual orientation. Candida albicans is a sharp microorganism, which causes over 80% of vaginal contaminations. The point of this examination was to decide the impact of ozonized theobroma oil vaginal ovules in the treatment of incited vaginal candidiasis contrasted with Ketoconazole ovules in Sprague Dawley female rodents.

Methods and Findings: Animals were ovariectomized and infused with a hormonal treatment following 14 days so as to realize the oestrus cycle. Following 48 hours rodents with keratinous cellules were vaginally contaminated with an inoculum of 106-107 Candida albicans in 0.1 mL of phosphate cushion arrangement. Five creatures bunches were contemplated: bunch I (without treatment), bunch II (rewarded with unozonized theobroma oil ovules), bunch III (rewarded with ketoconazole ovules), bunch IV (rewarded with 10% ozonized theobroma oil ovules), and gathering V (rewarded with 20% ozonized theobroma oil ovules). Exudates were made before starting the treatment, 5 and 10 days during the treatment and 48 hours after the finish of treatment. Results exhibited a reduction of 0.7 log of the quantity of rodents with contamination following 5 days of treatment with 20% ozonized theobroma oil ovules; be that as it may, it was not watched disease in rodents following 10 days. A comparable outcome was gotten with ketoconazole ovules.

Keywords

Candida albicans; Candidiasis; Ketoconazole; Ovules; Ozonized theobroma oil; Sprague-Dawley female rats

Introduction

Candidiasis is a disease brought about by a yeast molded parasite of family Cryptococacea, which likewise incorporates a few sorts as Torulopsis, Trichosporum, Cryptococcus and Candida. Candida albicans is a saprophyte germ of ordinary microbiota of people and other hot blood creatures. It is a deft microorganism, which causes over 75% of the vaginal contaminations. Treatment of these contagious contaminations is on a very basic level dependent on polienes and some other imidazol subordinate medications. Be that as it may, the predominance of vaginitis by Candida is expanding the world over. The momentary treatment has exhibited an expansion in the germ protection from these meds and search of new treatment choices results happens to be critical.

Theobroma oil or cocoa margarine is a strong fat with a softening point extended somewhere in the range of 32 and 35°C. This item is exceptionally requested due to its appropriate properties for chocolate fabricate. At room temperature, it is hard and weak giving chocolate its snapping attributes, however it additionally has a precarious dissolving bend with complete softening at human internal heat level. This property gives a cooling sensation and a smooth rich surface; for instance, the substance of solids tumbles from 45 to 1% somewhere in the range of 30 and 35°C. The hardness of theobroma oil is identified with its strong fat substance at 20 and

25°C . This liquefying conduct is identified with the compound sythesis of theobroma oil. This oil is rich in palmitic (24-30%), stearic (30 to 36%), and oleic acids (32 - 39%) and its major triacylglycerol are of the sort SOS, where S speaks to immersed acyl chains in the 1 and 3 positions and O speaks to an oleyl chain in the 2 positions. Cocoa margarine has a high substance of immersed acids that raises wellbeing dangers, however it has been contended that the majority of these soaked acids is the noncholesterolemic stearic corrosive.

Materials and Methods

Forty female Sprague Dawley rodents (180-200 g) were bought from the National Center for Laboratory Animals Production (Cuba). Creatures were kept up in isolate in an air-sifted and temperature-molded room (20 ± 2°C) with a general moistness of 50 ± 5%. Rodents were taken care of with standard research center chow and water not indispensable and were held under a fake light/dull pattern of 12 hours. This was done by the moral rules for the examination with lab creatures and was affirmed by the Ethical Committee of Animal Experiments of the National Center for Scientific Research, Havana City, Cuba.

Sprague-Dawley female rodents were ovariectomized. Vaginal sweats were performed following 14 days to determinate oestrus cycle and the nearness of Candida albicans. All rodents had an infusion with hormonal treatment. Following 48 hours just the rodents with keratinous cellules were vaginally tainted by an inoculum of 106-107 Candida albicans in 0.1 mL of phosphate support arrangement. After four days, another vaginal perspiration was done to decide the disease level. They were considered as contaminated those rodents with additional to 102 CFU/mL of disease.

Five gatherings of contaminated creatures were examined: Group I (without treatment); Group II (rewarded with unozonized ovules); Group III (rewarded with ketoconazole ovules); Group IV (rewarded with 10% ozonized theobroma oil ovules); Group V (rewarded with 20% ozonized theobroma oil ovules).

One day by day ovules was applied. Exudates were made before start of the treatment, at fifth day of the treatment, at tenth day of the treatment and 48 hours after the finish of treatment.

Theobroma oil was provided by "Rubén David Suárez Abella" organization of Cuba. Ovules with theobroma oil and ozonized theobroma oil at 10 and 20% with vehicle in enough amount for a 100%, were explained in the Ozone Research Center with estimated estimations of peroxide record somewhere in the range of 110 and 220 mmol-equiv of dynamic O2/kg of test, separately.

Ketoconazole ovules 400 mg L-0705, was provided by "Roberto Escudero" pharmaceutical lab, Havana, Cuba.

Estradiol of Depósito 10 mg/1mL Lote 07001 and Sódico Tiopental 500 mg. Liofilizado. L-6004 were provided by Quimefa Company of Cuba.

For each gathering of rodents examined, the logarithm in base 10 of the quantity of microorganisms (Log N) as a component of time (0, 5, 10 and 12 days) was determined to standardize the circulation. These qualities were added and found the middle value of for each gathering and standardized to have the option to accurately decipher the outcomes.

Results and Discussion

Four creatures died during medical procedure. Thirty-three rodents were chosen to complete the experience (Candida albicans immunization), on the grounds that the vaginal mucous demonstrated estro qualities and didn't present Candida albicans disease.

During contamination process, 30 creatures accomplished disease levels better than 102 CFU/mL (Table 1), in this way it is viewed as that these creatures are tainted, which permitted the foundation of the effectivity in a 90%, which is a higher incentive than the 80% got by an

exploratory model published.by Lezcano.

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