

TITLE: ANTIFUNGAL ACTIVITY OF OZONIZED COCONUT OIL AGAINST *Candida* spp.

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ABSTRACT:

The *Candida* species are part of the regular microbiota of a healthy individual. However, in immunocompromising situations, the establishment of infections is favored, due to an increase of host's susceptibility to the action of pathogens. Resistance to common antifungals has been observed in *Candida* genus fungi, raising the need for new effective antifungal. Thus, the objective of the present study was to test the antifungal activity of ozonized coconut oil against different *Candida* species. The antifungal susceptibility test was done using the broth dilution method, according to the Clinical and Laboratory Standards Institute (M27-A3), with modifications concerning the coconut oil. The tested American Type Culture Collection (ATCC) reference strains were *Candida albicans* (ATCC 90028), *Candida glabrata* (ATCC 90030), *Candida tropicalis* (ATCC 750) and *Candida parapsilosis* (ATCC 22019). In addition to ozonized coconut oil, pure coconut oil was also tested. The concentrations tested ranged from 457,700 µg/mL to 893 µg/mL for ozonized and from 462.200 µg/mL to 903 µg/mL for pure coconut oil. After 24 and 48h at 35°C, aliquots were plated in Sabouraud Dextrose Agar, to identify the minimum fungicide concentration (MFC). The MFC considered was the lowest concentration of oil capable of inhibiting 100% of cellular viability when compared to the yeast without oil. The antifungal activity analysis of the ozonized coconut oil during 24h incubation period presented MFC of 114,425 µg/mL for all strains tested. Within 48h, the MFC for *C. tropicalis* kept the same as in 24h, whereas for *C. albicans*, *C. glabrata* and *C. parapsilosis*, it increased to 228,850 µg/mL. The results showed that the strains tested were susceptible to the ozonized coconut oil. Pure coconut oil did not show antifungal activity. In summary, the ozonized coconut oil presented relevant antifungal activity, which incites more studies using this compound, since ozone is considered an antimicrobial agent due to its oxidative properties, acting directly on the fungus cell wall and on cytoplasmic elements, which leads to cellular lysis.

Key-words: *Candida* spp.; Coconut oil; Minimum fungicide concentration; Ozonized oil