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File: ■ Tea Tree (*Melaleuca alternifolia*, Myrtaceae) Oil
■ Oral Fungal Infections
■ Clotrimazole

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RE: Efficacy of Tea Tree Oil for Oral Fungal Treatment

Maghu S, Desai VD, Sharma R. Comparison of efficacy of alternative medicine with allopathy in treatment of oral fungal infection. *J Tradit Complement Med*. March 18, 2015;6(1):62-65.

Tea tree (*Melaleuca alternifolia*, Myrtaceae) oil is traditionally used for pain, wounds, and colds. The oil contains several bioactive compounds, such as monoterpenes and sesquiterpenes, and has been shown to possess antiviral, antibacterial, and antifungal activities. Some previous studies have reported that tea tree oil can alleviate fungal infections; however, investigations have been rather limited. This randomized, single-blind, and observational study evaluated the efficacy of tea tree oil (manufacturer not provided in article) in comparison with clotrimazole (a standard antifungal drug) and a conservative approach in patients with oral fungal infections.

Patients with oral candidiasis (*Candida* spp. yeast infection) were recruited from Jaipur Dental College (Kukas, India). Symptoms were reddening, burning, inflammation, and presence of the fungus. Those with diagnosed candidiasis who were male or female, available for follow up, and aged 20-60 years old were included in the study. Excluded were those who were taking antifungal drugs; had tested positive for HIV; had serious disease; were receiving radiation treatment; and had adverse side effects from tea tree oil. Included patients were randomly assigned into a group taking tea tree oil, a group taking clotrimazole, and a group participating in "conservative management." The study duration was 3 weeks, and evaluation was made for redness, burning (using a visual analog scale), inflammation, and presence of fungus.

The tea tree oil group was told to rinse with the oil (dilution of 5 ml oil/50 ml water; equal to a concentration of 0.10%) 3 times daily after meals. Patients refrained from food or drink for 30 minutes after the rinsing. Those taking clotrimazole used the ointment 3 times daily after meals. Those in the conservative management group cleaned and washed oral prostheses every day and removed the prosthesis at night. No other description of the conservative management group was given. No mouthwash or "auxiliary cleaning aids" were allowed during the study.

In total, 36 patients were included in this study, with 13 patients in the tea tree oil group, 13 in the clotrimazole group, and 10 in the conservative management group. At the end of the study, those using the tea tree oil showed reductions of symptoms in all areas of assessment—89% in redness, 100% in burning sensation, 85.7% in inflammation, and 85.7% in fungal hyphae. The clotrimazole group had reductions of 71% in redness, 100% in burning sensation, 80.0% in inflammation, and 100% in fungal hyphae. Lastly, those in the conservative management group had reductions of 40% in redness, 50% in burning sensation, 66.7% in inflammation, and 100% in the presence of fungal hyphae. No statistical analyses or comparisons were included in this study.

In summary, the clotrimazole and conservative management treatments resulted in complete eradication of the fungus, while the tea tree oil successfully alleviated infection symptoms to a greater or equal degree than the other treatments; however, this may not be statistically relevant. It is mentioned that antifungal resistance has been observed with the use of azole drugs; thus, alternative treatments may be necessary in the future. Although not measured in this study, it is also stated that tea tree oil may be advantageous due to a lesser degree of solubility in saliva as opposed to clotrimazole. This study suggests that further investigation of the oral use of tea tree oil to treat oral fungal infections is warranted.

—Amy C. Keller, PhD

Referenced article can be accessed at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4738066/.