Title: INHIBITORY EFFECT OF FARNESOL AGAINST Sporothrix COMPLEX.

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Abstract:
Sporotrichosis is a subacute or chronic disease caused by the dimorphic fungus Sporothrix schenckii. It is usually an infection limited to the skin and subcutaneous tissue, where contamination occurs mainly by traumatic inoculation of the skin. Reports indicated a possible increase in incidence in recent years. Despite the existence of effective therapies that use conventional antifungal agents against Sporothrix schenckii, the search for alternatives for the treatment of this disease is always relevant. With this in mind, the present study tested the efficacy of farnesol against the strains belonging to the S. schenckii complex. Susceptibility to farnesol was tested against Sporothrix complex: S. schenckii (n=6), S. brasiliensis (n=26), S. mexicana (n=5) and S. globosa (n=3). Strains were isolated from clinical, animal and environmental sources. For this analysis, susceptibility tests were performed according to M38-A2, standardized by the Clinical Laboratory Standards Institute (CLSI). Farnesol was diluted in DMSO, in concentrations ranged from 0.0078 μM to 150 μM. Plates were incubated in 35°C during 72h. Interpretation of the results was done by visual observation of the Minimum Inhibitory Concentration (MIC) of 80% of growth inhibition, compared to control. Farnesol inhibit Sporothrix complex, with MIC ranges from 0.0078 μM to 0.25 μM for S. brasiliensis. Five strains of S. mexicana showed MIC range of 0.0156 μM to 0.5 μM. Regarding the specie S. schenckii, strains had MIC ranges of 0.0312 μM to 1.0 μM. To the strains of S. globosa, MIC ranges were from 0.0312 μM to 0.25 μM. From the MICs found, was assessed the Minimum Fungicidal Concentration (MFC), and observed that the concentration needed to prevent, in full, the growth of the all strains varied in the range from 0.0312 μM to 4.0 μM. Given the above results, this study reports knowledge about the antifungal properties of farnesol as well as broaden the outlook of alternative therapies for sporotrichosis.

Keywords: Sporothrix spp., Susceptibility, Farnesol.

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