Synergistic Activity of Hydroxychavicol with Amphotericin B and Tunicamycin against Oral Candida spp.

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ABSTRACT

Systemic fungal infections are responsible for high mortality rates. Several species of fungi may be involved, but Candida spp. is the most prevalent. Three types of antifungal agents were screened in vitro for their potentiation of the antifungal effect on Candida spp. Combination of antifungal agents from different classes and mode of action are being studied. The aim of this study was to determine the in vitro interactions between hydroxychavicol (HC) in association with two antifungal drugs—amphotericin B (AmB) and tunicamycin (TM) alone and in combination against six different oral Candida spp. in their planktonic states. In vitro susceptibilities of the Candida spp. to antifungal drugs were investigated by broth microdilution method according to the recommendations of the Clinical and Laboratory Standards Institute (CLSI). The intensity of the interactions was determined by visual reading and spectrophotometric method in checkerboard microdilution assay, and the nature of the interactions was assessed by nonparametric models of fractional inhibitory concentration (FIC) index. MIC<sub>50</sub> of HC, AmB and TM alone against six different planktonic Candida spp. ranged from 250 to 500 µg/ml, 1.95 to 15.6 µg/ml and 7.8 to 31.25 µg/ml respectively. However, when HC was used in combination with AmB at 2:1 ratio, the MICs were decreased in some of the Candida spp. Our results demonstrated synergistic effect between HC and AmB in some of the Candida spp. such as C. parapsilosis and C. dubliniensis. Synergy effect was not observed in the majority of Candida spp. for the combination of HC with TM analyzed by FIC index. The data showed that combination of HC with AmB yielded synergism against some Candida spp. and may be useful in the treatment of systemic infections caused by oral Candida spp. Whereas combination of HC with TM yielded indifferent interaction.

Keywords: Candida, hydroxychavicol, amphotericin B, tunicamycin, synergistic

Health Effects of Air Quality: University Students Perspectives

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ABSTRACT

Air pollution has significant effect to human health, agriculture and ecosystem. There are numerous reports pertaining to the effect of air pollution on human health, agriculture crops, forest species and ecosystem. The objective of this study is to look at the perspective of university students about the effects of air pollution on human health. 46 respondents from Universiti Teknologi MARA Pulau Pinang have been selected randomly to participate in this pilot study. The research finding shows that on average 73.8% students have knowledge on the effect of air pollution to their health. Results with mean(4.09) imply that students are mostly concerned about the environment for children while they are less concerned about the asthma incidences cause by air pollution.

Keywords: Health, Air Pollution, Survey, Emissions
PROGRAMME & ABSTRACT BOOK

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