Effect of xylitol with various concentration and duration on the growth of candida albicans (in vitro study)

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Abstrak

ABSTRAK
The growth of C. albicans is influenced by glucose intake. Xylitol is commonly used as sugar substitute. Reported effective concentrations of xylitol in reducing C. albicans growth in vitro were varied, 1%, 5%, and 10%. Objectives: Investigate the effect of different concentration and duration of xylitol exposure in inhibiting C. albicans growth in vitro. Method: Identification of C. albicans from oral swab of a male candidiasis patient was conducted using CHROMagar, confirmed by germ tube test. C. albicans suspension (108 cells/µl) were inoculated in SDB contained 1%, 5%, 10% xylitol, and without xylitol (as control), for 3 and 7 days, then incubated in 37oC on SDA and counted for their CFU after 48 hours. The C. albicans ATCC 10231 strain was used as a
comparison. Results: After 3 days, increased concentration of xylitol (1%, 5%, 10%) lead to decrease growth of C. albicans, both the ATCC 10231 (125%; 51%; 14% respectively) and the clinical isolate (103%; 81%; 42%), p = 0.044. Significant lower growth of C. albicans compared to control were only seen in those exposed to 10% xylitol (p = 0.024). After 7 days, exposure of 1%, 5%, 10% xylitol did not significantly affect the growth of C. albicans (p = 0.396). Conclusion: The growth of C. albicans could be inhibited by 10% xylitol for 3 days.