

Effect of xylitol on candida albicans resistance in serum (in vitro study)

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Abstrak

Xylitol is reported to inhibit the growth of *C. albicans*. Objectives: Investigating serum factor role in inhibiting the growth of *C. albicans* and the effect of 1%, 5%, 10% xylitol in *C. albicans* resistance in serum in vitro. Methods: Identification of *C. albicans* (oral swab of candidiasis patient) was conducted using CHROMAgar, confirmed by germ tube test. The cultures were serially diluted, inoculated in Sabouroud Dextrose Broth (SDB) contained 0% (control), 1%, 5%, or 10% xylitol, and kept for 3 or 7 days. These inoculations were then exposed to either active or inactive serum (Fetal Bovine Serum heated in 65°C for 30 minutes) for 2 hours in 37°C. The colony forming unit (CFU) of *C. albicans* in Sabouroud Dextrose Agar (SDA) were counted after 2 days. *C. albicans* ATCC 10231 strain was used as a comparison. One-way ANOVA with a 0.05 was used. results: After 3 days cultured in media with or without xylitol, the CFU of *C. albicans* exposed to active serum were significantly lower than those exposed to inactive serum ($p=0.032$). Although not statistically significant ($p=0.689$), increased concentration of xylitol lead to increased resistance of *C. albicans* in active serum. Only 7 day exposure of 10% xylitol resulted in significantly higher growth of *C. albicans* ($p=0.034$). No significant difference of *C. albicans* CFU in active or inactive serum ($p=0.404$). Conclusion: Serum factor has role in inhibiting *C. albicans* growth in vitro. Exposure of 1%, 5%, or 10% xylitol for 3 or 7 days has no significant effect on *C. albicans* resistance in serum.