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

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 Saburoud 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 Saburoud 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 xylitollead 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.