Efek penambahan glukosa pada saburoud dextrose broth terhadap pertumbuhan candida albicans (uji in vitro)

Abstrak

High carbohydrate intake is one of predisposing factors of oral candidiasis. Wheather glucose addition in medium will increase the growth of Candida albicans in vitro is subject to further investigation. Objective: Investigating the effect of 1%, 5%, 10% glucose addition on the growth of C. albicans in vitro. Method: C. albicans sample was taken from oral swab of a male oral candidiasis patient. Identification of C. albicans was conducted using CHROMagar and confirmed by germ tube formation in serum. C. albicans colonies were inoculated in SDB. As a comparison, C. albicans ATCC 10231 was used. After 2 days the cultures were serially diluted and inoculated in SDB without glucose (control), and with 1%, 5%, 10% addditional glucose, kept for 3 and 7 days in room temperature, then inoculated in SDA. The CFU/ml were counted after 2 days. ANOVA with α 0.05 was used. Result: After 3 days, additional 1%, 5%, and 10% glucose in media with clinical strain of C. albicans resulted in 181.5, 582, and 811 CFU/ml respectively while in media with C. albicans ATCC were 21.5, 177.5, 375.5 CFU/ml. The growth of C. albicans with no additional glucose were 970 (clinical strain) and 957 CFU/ml (ATCC). After 7 days, the growth of clinical strain of C. albicans with additional glucose 1%, 5%, 10% were 2350, 9650, 9560 CFU/ml respectively while the growth of C. albicans ATCC were 5000, 5450, 3550 CFU/ml. Statisticaly, additional 1% glucose for 3 days lead to significant decreased of growth of both clinical strain and ATCC 10231 C. albicans ($p < 0,05$). However, only additional 5% and 10% glucose in clinical isolate for 7 days increased the growth of C. albicans significantly ($p < 0,05$). Conclusion: The effect of additional glucose on the increased growth of C. albicans in vitro is influenced by the concentration, exposure duration of glucose, and by the strain of C. albicans.