

Comparative effect of formaldehyde tablet at 28 and 50 centigrade

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Dentistry career in most of treatments is directly in contact with patient's blood and saliva. Most of human pathogen microbes are able to transfer via blood and mouth secretions and therefore the patient and therapist are in danger. One of the substances used as a tool disinfectant and sterilizer is formalin. The most important factor to evaluate the antibacterial power is the sporocidity of the substance.

Bacillus subtilis is a gram positive microorganism, containing endospore, and highly stable in difficult situations and in contact to disinfectant. In this study, formalin antibacterial effect on *Bacillus subtilis* in 28°C is compared with its effect in 50°C.

The samples were sterile aluminum plates exposed to *Bacillus subtilis*. The study performed in 28°C (lab temperature) and 50°C. In each step, two cabinets were used; one included 10 formaldehyde tablets and the other one included no formalin tablet. In each cabinet, we put 40 plates of contaminated to the *Bacillus Subtilis*. Then at 4, 5, 6 and 8 hours later, each time 10 plates were taken out from both cabinets and cultured. After 24 hours, the colonies were counted and we analyzed the results.

The results showed that the average number of colonies in blank group was increased in 28°C by time. In case group in 28°C and in the control group and case group in 50°C, the average numbers were decreased. In similar times there were significant difference with $P_value < 0.05$ between case - control, case - case and control - control groups.

Formalin is not suitable for sterilizing containing spore's surfaces in 28°C and 50°C and at 4, 5, 6 and 8 hours after exposing. Also formalin in these temperatures and even after 8 hours later shows only disinfectant effect which is not reliable for sterilization. There is a direct relationship between the effect of increased temperature and time on the formalin efficacy for sterilizing the aluminum plates which had contaminated by *Bacillus subtilis*.

Biography

Arash Daraeighadikolaei have completed his General Dentistry at the age of 25 years from Ahvaz Jundishapur University, Iran, 2007. And this research is actually his thesis project which he has conducted under supervision of Dr. Mehran Shokri, OMFS, DMD in Ahvaz dental school.

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