ABSTRACT

THE RELATION OF TYPE OF SURGERY AND DURATION OF

OPERATIONS ON THE NUMBER OF AIR BACTERIA IN OPERATING

ROOM OF HOSPITALS

Background: The concentration of air bacteria in the operating room is one of the biggest contributing factors in the occurrence of Surgical Site Infection. For this reason, it is necessary to review the factors that influence the number of air bacteria in the operating room. In this study the factors studied were the type of operation and the duration of operation.

Objective: Study the effect of type of operation and duration of operations on the number of air bacteria in the operating room of hospitals.

Methods: Air bacterial sampling method using Settling Plate method which is done by placing Plate Count Agar (PCA) containing Blood Agar media in an open state to be exposed to air in the operating room for about 30 minutes, then incubated for 48 hours by monitoring every 24 hours. The number of colonies growing on the PCA is a description of the number of bacteria found in the operating room. Sampling was done twice, before the operation and after the first operation on that day with a total of 30 samples divided into 15 clean operations and 15 clean-contaminated operations.

Result : There is a significant relation between the types of operations and the number of air bacteria after the operation ($p = 0.003$). There was also a correlation between the duration of operation on the number of air bacteria both in clean operations ($p = 0.014$) and clean-contaminated operations ($p = 0.047$). The correlation coefficients are both 0.618 and 0.520, which means that the relationship strength is strong. There was also a significant relation between type and duration of operation on the number of air bacteria after the operation ($p = 0,000$).

Conclusion: There is an influence of the type of operation and the duration of operation on the number of air bacteria in the operating room of hospital.

Keywords: Air bacteria, operating room, bacterial colonies, type of operation, duration of operation