

TITLE: EVALUATION OF ADHESION AND BIOFILMS FORMATION BY *Klebsiella pneumoniae* ISOLATED FROM HOSPITAL AND ATCC 13883 IN SILICONIZED BLADDER CATHETER OF LATEX.

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ABSTRACT:

The formation and permanence of biofilms formed by pathogenic microorganisms on surfaces of medical devices is mainly related to infections attributed to the use of catheters, with *Klebsiella pneumoniae* as the prevailing causative agent. The risk of infection is associated with the length of time this device stays in contact with the patient, which can lead to severe complications, sequelae, increased length of stay and increased costs of patient care. This research aims to observe the dynamics of biofilm formation by *Klebsiella pneumoniae* in a urinary catheter of siliconized latex, as well as to evaluate the ideal time for adhesion of the cells to the surface. Siliconized latex probe coupons with approximate area of 1 cm², previously sanitized, were immersed in culture medium (BHI) with bacterial suspension of *Klebsiella pneumoniae* strains, ATCC 13883 and wild isolated, separately. The time used for biofilm evaluation was: initial time, 0h, 30min, 1h, 2h, 4h, 8h, 16h, 32h, 64h, 128h and 256h, incubated at 35±2°C. Planktonic cell count and adherence were done on MacConkey agar in three replications, with incubation at 35±2°C. At 32 h of incubation, both reached a quantity of planktonic cells adhered and considered sufficient to establish a bacterial biofilm. Considering that the ATCC 13883 had a population of 7.6 Log CFU/mL and the wild-line 8.5 Log CFU/mL. Comparing the two strains shows the difference in the time of development of each one, as well as the adaptation to the medium and the time that each takes to adhere to the surface of the probe. *Klebsiella* ATCC 13883 had a higher number of planktonic cells than the wild-type isolate. At other times, there was a large difference in planktonic cell numbers. The wild-type lineage had a larger population adhered than the ATCC in the times of 32h and 128h. At times when there were not enough cells for adhesion, it is explained by the fact that the microorganism is going through the stages of cell growth - decline and death - at the end of the experiment.

Palavras-chave: biofilms, infection, *Klebsiella*, resistance,.

Development Agency: CAPES.