

TITLE: COLONIZATION WITH MULTIDRUG-RESISTANT MICROORGANISMS
IN A NEONATAL INTENSIVE CARE UNIT

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ABSTRACT:

Newborn in neonatal intensive care unit – ICU are exposed to a considerable number of infections, which can increase the morbidity and mortality rates. In order to minimize the infection risk, it is important to know the diversity of microorganisms that are spread in neonatal ICU and the antibiotic susceptibility profile of this population. An important technique used in microorganism's epidemiological surveillance in ICU is the use of rectal swab cultures. In this view, the main goal of this study is to analyze the intestinal microbiota of neonates in ICU of a public hospital located in the southwest of Paraná. This study was approved by the Ethics Committee (94588218.5.0000.0109). Swab rectal samples were obtained from 32 neonates hospitalized in the ICU. From the collected material we analyzed the fungal and bacterial community, as well as the antimicrobial susceptibility profile of each isolate. The neonates were born after around 34 weeks of pregnancy, and 72.3% of them were male and 22.7% were female, that were hospitalized for around 21 days. The mainly reason for the hospitalization was because they born premature, associated with respiratory distress syndrome in 61.1%. In addition, 88.9% of the neonates were in treatment with gentamicin and ampicillin (100%) antibiotics. From the rectal swab cultures, 44.5% of the neonates were colonized by multidrug-resistant, mainly by the bacterium *Klebsiella pneumonia* (87.5%), all the strains were Extended Spectrum β -lactamases (ESBLs). And *Candida albicans* (22.2%) was the most frequent fungus. After the sample collection, 77.8% of the neonates were discharged from the ICU, 16.7% remained hospitalized during the study development, and 5.5% died. Analyzing the epidemiological aspects was possible to observed that the premature neonates, which have the longer time of antibiotic therapy and hospitalization and lower time of gestation are more susceptible to be colonized by multidrug-resistant bacteria and fungi. In addition, male was more colonized than female neonates, and the bacterium *Klebsiella pneumoniae* and the yeast *Candida albicans* were the most common species isolated, which suggest that these microorganisms are more adapted to the hospital conditions, and have mechanisms to survive the high antibiotic pressure found in ICUs.

Keywords: Premature neonate, Intensive Care Unit, Antibiotic resistance.