

**TITLE:** DETECTION OF  $\beta$ -LACTAMASE PRODUCING NEGATIVE GRAM BACTERIA IN CHILDREN'S TOP RESPIRATORY TRACT.

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**ABSTRACT:**

In the human body there are several non-pathogenic bacteria that form the microbiota, but depending on some factors of the host, such as immunity and age, they can cause disease. The objective of the study was to characterize phenotypically upper respiratory tract (URT), colonizing bacteria of three children in three anatomical sites, oropharynx, rhinopharynx and nasopharynx. The samples of the children were collected before the adenotonsillectomy procedure, in a surgical center, in a public hospital in Goiânia city. After collection, the material was seeded in salted mannitol agar, MacConkey and blood agar, and incubated for 24 hours at 37°C in aerobiosis. After growth, the morphological and morphotintoral characterization was performed, as well as biochemical tests to identify the isolates and the antibiogram test to verify bacterial resistance. Samples that showed resistance to  $\beta$ -lactams were subjected to screening tests for the detection of  $\beta$ -lactamase production - AmpC, metalo-beta-lactamase, ESBL and carbapenemase. Among the isolated bacteria, those with  $\beta$ -lactamase production were *Klebsiella* spp. And *Hafnia alvei*, being positive for ESBL production; *Enterobacter aerogenes*, *Yersinia enterolytica* and *Hafnia alvei*, positive for AmpC. In the routine diagnosis of URT infections, the antibiogram test is usually not used prior to antibiotic prescribing. This behavior is worrisome due to the presence of  $\beta$ -lactamase producing bacteria, an enzyme characterized by resistance to  $\beta$ -lactams, which are the main choice for the treatment of URT infections. Due to this indiscriminate treatment, recurrent infections become frequent, in addition to the spread of bacterial resistance. Therefore, this study highlights the importance of further investigation of the etiological agent of URT infections, with isolation and bacterial identification, followed by the antibiogram, so that there is a correct diagnosis and treatment of this type of infection

**Keywords:** Upper respiratory tract, bacterial resistance, *Staphylococcus* spp, *Enterobacter aerogenes*, *Klebsiella* spp.