

TITLE: PROFILE OF URINE SAMPLES WITH PRESENCE OF SPHERPLASTS AND/OR FILAMENTOUS FORMS IN THE URINARY SEDIMENT

AUTHORS: LEITE, S.B.¹; POLONI J.A.T.^{1,2}, ROTTA L.N.¹

INSTITUCION: ¹ Universidade Federal de Ciências da Saúde de Porto Alegre . Rua Sarmento Leite, 245 - Porto Alegre, Rio Grande do Sul, Brasil.; ² Santa Casa de Misericórdia de Porto Alegre. Rua Professor Annes Dias, 295 - Porto Alegre, Rio Grande do Sul, Brasil.

ABSTRACT:

Studies show that the gram-negative bacteria are capable of forming spheroplasts and/or filamentous forms (bacterial variants) as a mechanism of β -lactam antibiotics resistance characterized as multidrug resistance (MDR) in bacteria. The objective of this study was to evaluate the profile of urine samples with presence of spheroplasts and/or filamentous forms, observed in the urinary sediment towards the presence of multidrug-resistance bacteria. The cross-sectional study analyzed 7,934 urine samples of Laboratório Carlos Franco Voegeli of Santa Casa de Misericórdia de Porto Alegre between August 2016 and January 2017. It was found 384 urines of patients that presented bacterial variants in the urinary sediment. The urine culture and antimicrobial sensitivity test was by MALDI-TOF mass spectrometry methodology performed for MALDI Biotyper[®] Microflex LT that interprets and provides the result from a computerized database. Among the 263 (68.5%) samples that had positive urine culture, in 152 (57.8%) was identified *Escherichia coli* and in 51 (19.4%) *Klebsiella pneumoniae*. The MDR was observed in 93 samples (35.4%), of which 54 (58.1%) shows *E. coli* and 39 (41.9%) *K. pneumoniae*. The prevalence of MDR between *E. coli* was 35.5% whereas between *K. pneumoniae* was 76.5%. Among MDR *K. pneumoniae*, 13 (33.3%) samples show *Klebsiella pneumoniae* carbapenemase (KPC), and 5 (12.8%) had reduced susceptibility of carbapenem-resistant and 1 (2.5%) was producer of extended-spectrum β -lactamases. The study showed an increased number of MDR *K. pneumoniae*, so that it is necessary to be alert to your occurrence in the population due to manifestation of KPC. The results showed that the presence of spheroplasts and/or filamentous forms in the urine may be related to a profile of MDR of bacteria being required deeper studies about it.

Keywords: Spheroplasts, filamentous form, multidrug resistance.

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