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## Antibiotics sensitivity of microorganisms causing nosocomial infections

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Nosocomial infections are a major problem today, not only in developing countries but also in the major developed countries, because the microorganisms causing these problems belong to the ESBL producing bacteria and are resistant to several antibiotics. These types of infections are often associated with higher healthcare cost of hospitalized patient, and high mortality rates. The goal of our research was to identify the causative bacteria of nosocomial infection in several hospitals and determine the antibiotic resistance in Adjara. 81 samples were taken the first 48 hours and totally examined.

Isolation and identification of bacteria were carried out by using the standard bacteriological methods, such as the culturing of a culture into culture medium, obtaining of pure culture and identification of cultures by using the API tests, the antibiotic resistance was determined by Bauer-Kirby Disk Diffusion method.

There were 27 samples of sputum, 19 samples of blood, 18 samples of urine and 17 samples of biological fluids. *Acinetobacter*, *E. coli*, *Pseudomonas aeruginosa*, *Klebsiella pneumoniae* were the most numerous among the agents of nosocomial infection. All isolates were examined for the antibiotic resistance of the following antibiotics: Cefalosporine Ceftriaxone, Cefepime, Piperacillin, Aztreonam, augmentin, Penicillin, Oxacillin Ciprofloxacin, Colistin, imipenem, meropenem, gentamicin, Amikacin, Ampicillin / sulbactam, Co-trimoxazole, Kloramfenikol, Fosfomycin. All isolates of the gram-negative bacteria were resistant to Augmentin, Ampicillin and Penicillin.

**Conclusion:** Augmentin, Ampicillin and Penicillin belong to antibiotics of  $\beta$ -lactam group, which cause the resistance problem worldwide. It should be noted that they are antibiotics drugs using massively in Georgia. Supposedly, use of these drugs as unauthorized, illegal in most cases without a prescription (these drugs are freely sold in pharmacies) contributes to the formation of antibiotic resistance.

**Keywords:** Nosocomial infection, Gram negative bacteria,  $\beta$ -lactam, resistance.

### Biography

Tea Koiava graduated from Batumi Shota Rustaveli State University in 2007 with a master's degree in Genetics. She actively engaged in scientific conferences during my study period in University. Since 2007 she has been working at Batumi Shota Rustaveli State University as a chief specialist of the Department. And actively engaged in medical / educational and many other kinds of measures taking place at University and leading training courses in Biology as well, scientific activities of the Department. She was taking part in various grant projects and seminars dedicated to actual/present problems of Biomedicine, where she had presented results of her researches. She is an author of five scientific papers. Presently she is a PhD student of Biology Educational Program, specializing in Microbiology. Topic of my dissertation is: "The Separation, Identification and Antibiotic Resistance Study of Nosocomial Infections Spread in Adjara Region".

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