



## 6<sup>th</sup> WSES Congress 2019

### Title: Evaluation of safety and efficiency of aminoglycoside antibiotics in the treatment of acute abdominal infections

**Authors:** Tadeja Pintar<sup>1</sup>, Lucka Setinc<sup>2</sup>, Aleksandar Zafirovski<sup>2</sup>, Bojana Beovic<sup>3</sup>

**Affiliations:** <sup>1</sup> UMC Ljubljana, Abdominal Surgery Dep., Zaloska cesta 2, 1000 Ljubljana, <sup>2</sup>University of Ljubljana, Medical Faculty, <sup>3</sup>UMC Ljubljana, Clinic for Infectious Diseases and Therapeutics

**Topic:** Surgery, safety, antibiotic

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**Background:** Aminoglycosides are used as empirical antibiotic treatment of intraabdominal infections which are caused by Gram negative bacteria and for which the treatment of choice is surgery. Aminoglycosides maintain good efficacy against these bacteria and reduce the need of prescribing fluoroquinolone, cephalosporin and carbapenem antibiotics which contribute to the development of resistant bacterial strains. In recent years several clinical trials and international guidelines have advised against the use of aminoglycosides owing largely to doubts about their effectiveness and to the concern for their known nephrotoxicity and ototoxicity.

**Aim:** In our study we aimed to prove whether aminoglycosides are appropriate agents in treatment of acute surgically managed intraabdominal infections.

**Methods:** In our retrospective study we included clinical cases of patients with acute cholecystitis and acute appendicitis. We recorded demographic characteristics, comorbidities, clinical signs and symptoms, and the type of antibiotic and surgical treatment. The effect of independent variables on the occurrence of complications was calculated using Student's T-test and Fisher's precise test. The effect of aminoglycosides on the loss of kidney function was determined by means of a linear regression method.

**Results:** 578 patients were included in the study: 278 had acute cholecystitis and 300 had acute appendicitis. Univariate statistical analysis showed that the risk factors for postoperative complications in treating acute intraabdominal infections were: age over 76 years ( $p < 0,001$ ), diagnosis of 'acute calculous gangrenous cholecystitis' ( $p = 0,01303$ ), 'acute perforated appendicitis' ( $p = 0,03573$ ) and 'appendicitis with periappendiceal infection' ( $p = 0,01253$ ), the presence of cardiovascular ( $p < 0,001$ ), pulmonary ( $p = 0,00339$ ), and kidney ( $p < 0,001$ ) diseases, and an achieved ASA group of IV ( $p < 0,001$ ). Treatment with aminoglycosides did not influence the occurrence of post-operative complications ( $p = 0,3135$ ). Multivariate statistical analysis showed that aminoglycosides did not have a statistically significant effect on the decrease of glomerular filtration rate.

#### Discussion:

Aminoglycoside antibiotics are a safe and effective treatment of intraabdominal infections which require surgery. If used for a limited time period they do not increase the risk for kidney injury.



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