

VI KONGRES SRPSKOG  
ANATOMSKOG DRUŠTVA  
ZLATIBOR, 07-09.9.2018.

6th CONGRESS OF SERBIAN  
ANATOMICAL SOCIETY  
Zlatibor, September 7-9, 2018.

# ZBORNIK SAŽETAKA ABSTRACT BOOK



Република Србија  
МИНИСТАРСТВО ПРОСВЕТЕ  
НАУКЕ И ТЕХНОЛОШКОГ  
РАЗВОЈА



PP 34

### THE EFFECT OF TRAMADOL ON PATHOHISTOLOGICAL ALTERATIONS OF GASTRIC MUCOSA IN STRESSED RATS

Rasic J<sup>1</sup>, Janicijevic Hudomal S<sup>1</sup>, Stanojevic Ristic Z<sup>1</sup>, Kistic B<sup>2</sup>, Rasic D<sup>3</sup>, Vitkovic L<sup>4</sup>, Mijovic M<sup>5</sup>

<sup>1</sup> Institute of Pharmacology and Toxicology, Faculty of Medicine, University of Pristina, Kosovska Mitrovica, Serbia

<sup>2</sup> Institute of Biochemistry, Faculty of Medicine, University of Pristina, Kosovska Mitrovica, Serbia

<sup>3</sup> Internal Clinic, Faculty of Medicine, University of Pristina, Kosovska Mitrovica, Serbia

<sup>4</sup> Institute of Histology and Embryology, Faculty of Medicine, University of Pristina, Kosovska Mitrovica, Serbia

<sup>5</sup> Institute of Pathology, Faculty of Medicine, University of Pristina, Kosovska Mitrovica, Serbia

**Introduction and aim:** The aim of our research was to examine the effect of tramadol on presence of stress-induced ulcer lesions, as well as pathohistological alterations of gastric mucosa in rats exposed to cold restraint stress (CRS).

**Material and methods:** The experiment was performed on male Wistar rats, weighing 220 g, exposed to cold restraint stress (CRS). Animals were pretreated with tramadol (Tramadol®) in the doses of 100 mg/kg body weight, injected intraperitoneally, just before cold-restraint stress. The total size of the lesions was expressed as ulcer index (UI). The pathohistological samples were analyzed by Leica DML S2 light microscope.

**Results:** In animals exposed to CRS there were macroscopically observed deep, dark erosions, and the UI was  $4.98 \pm 6.18 \text{ mm}^2$ . The presence of shallow and deep defects of the mucosa was pathohistologically confirmed, but also the presence of extravasated erythrocytes and hyperemic blood vessels. In the submucosa and l.m. mucosae the signs of inflammation were noted, i.e. edema and mass of leukocytes (polymorphonuclears). Tramadol decreased overall surface of the alterations in statistically significant manner, i.e. UI from  $4.98 \text{ mm}^2$  to  $0.02 \pm 0.04 \text{ mm}^2$  ( $p < 0.001$ ). The mucosal defects of the mucosa were observed pathohistologically, on the surface itself, but without accompanying bleeding. In the submucosal and l.m. mucosae, hyperemia, as well as the mass of leukocytes and mastocytes, were noted. On the surface of the mucosa, painted with PAS painted mucus cells and abundant presence of mucus.

**Conclusion:** Pre-treatment with tramadol can prevent the development of ulcer lesions, and thus it influences gastric pathohistological alterations in stressed rats.

**Keywords:** tramadol, stress ulcer, pathohistological alterations.