RALATIONSHIP BETWEEN GASTROESOPHAGEAL REFLUX DISEASE SYMPTOMS AND CIRCADIAN MELATONIN PRODUCTION

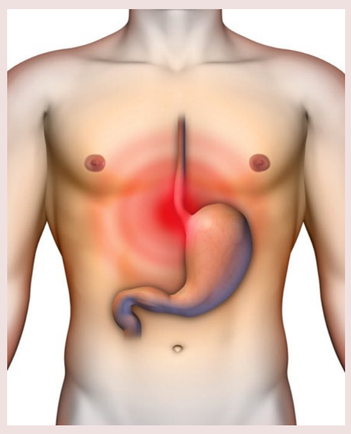
A. Karpovich
Grodno State Medical University

INTRODUCTION

Currently, gastroesophageal reflux disease is the actual problem of gastroenterology. The most common symptoms of gastroesophageal reflux disease are heartburn and regurgitation, which are the cause of discomfort. Single pilot studies demonstrate the effectiveness of melatonin for relieving symptoms of functional heartburn.

STUDY AIMS:

Investigate the correlation of symptoms of gastroesophageal reflux disease and circadian fluctuations in melatonin levels.



MATERIALS AND METHODS:

The investigations were carried out in 53 persons, aged 30-60 years (mean age 43.0 ± 9.5 years), including patients with GERD (group I, n=29), and healthy subjects (group II, n=24). All patients underwent esophagogastroduodenoscopy with esophageal mucosal biopsy. The expressiveness of symptoms of GERD (heartburn and regurgitation) was estimated with the help Likert scale. Daily melatonin production was assessed by concentration of 6-sulfatoxymelatonin (6-SMT) in 24-hour urine (as well as separately for day and night) by the ELISA method

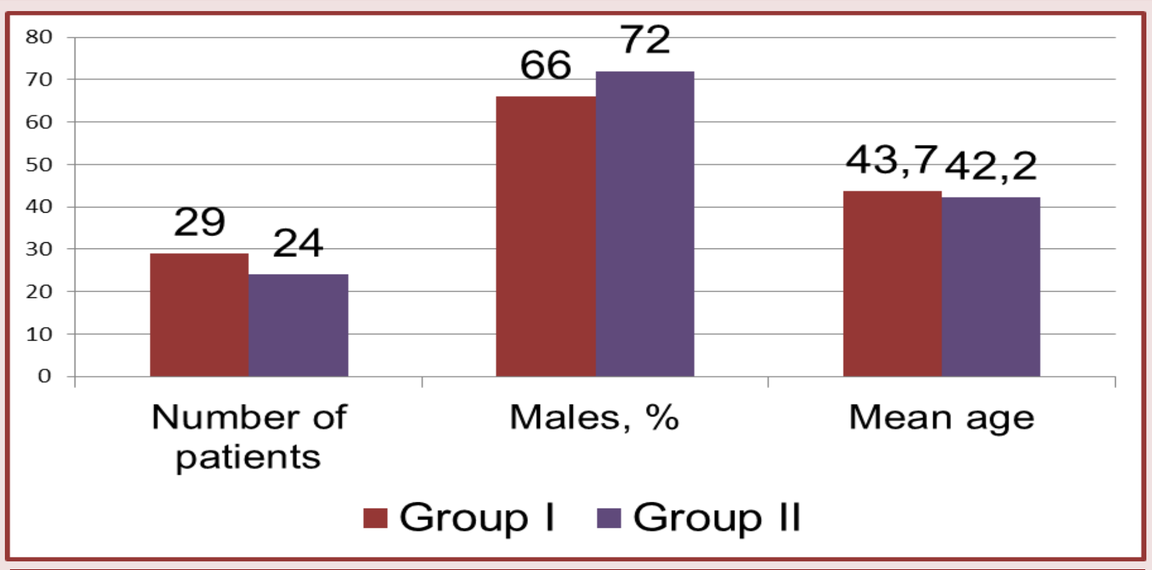


Diagram 1. – Comparative characteristics of groups

RESULTS:

Heartburn complaints were reported by 21 (72%) patients from the main group, and 4 (17%) patients from the comparison group ($\chi^2 = 16.38$; $p < 0.001$). Regurgitation was observed in 18 (62%) patients of the main group and 3 (13%) patients from the comparison group ($\chi^2 = 13.49$; $p < 0.001$).

RESULTS:

The level of 6-SMT in the 24-hour urine of patients with GERD was significantly lower than of healthy subjects . In day and night portion urine the content of 6-SMT of patients with GERD was also significantly lower than of healthy subjects.

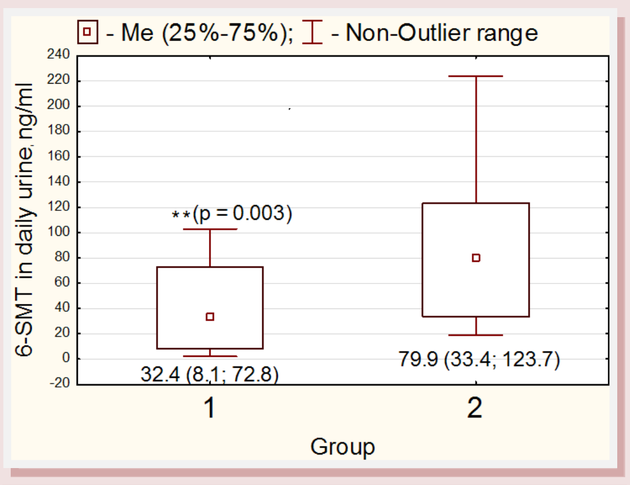
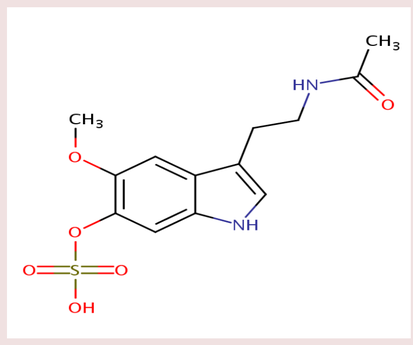


Fig. 1. Concentration of 6-SMT in 24-hour urine



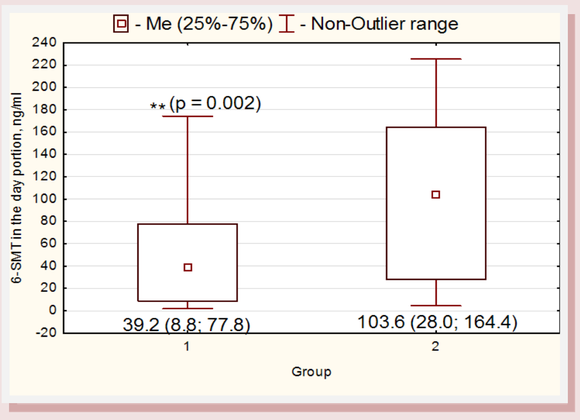


Fig. 2. Concentration of 6-SMT in day urine

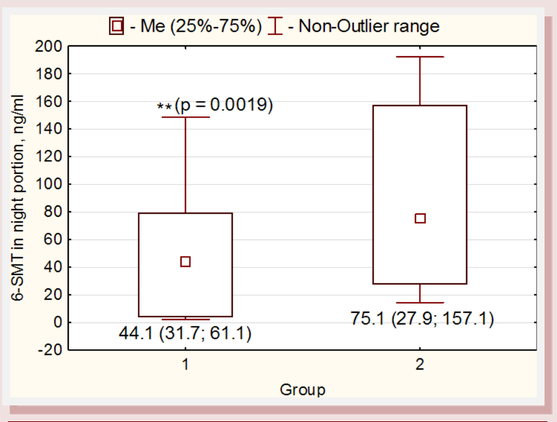


Fig. 3. Concentration of 6-SMT in nigth urine

CORRELATION:

The negative correlation was revealed between the severity of heartburn and level of 6-SMT in the day portion and the night portion urine

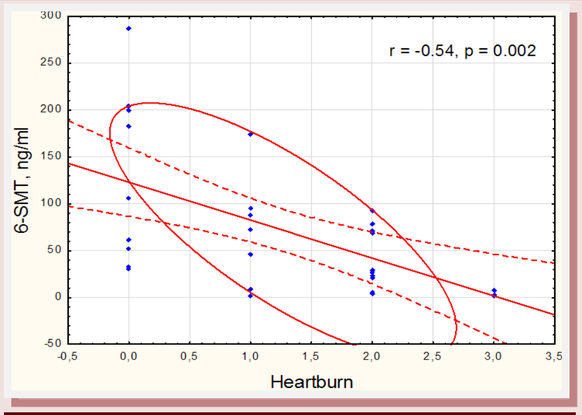


Fig. 4. The correlation between the severity of heartburn and level of 6-SMT in the day urine

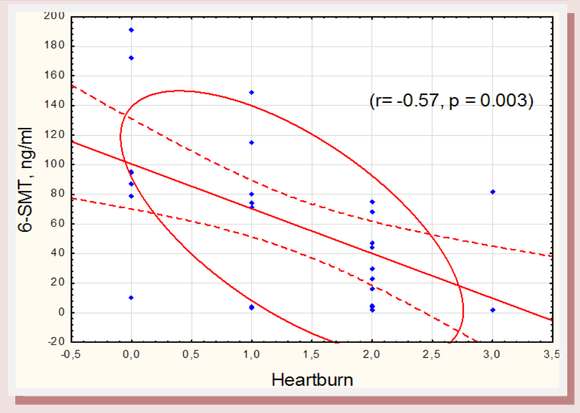


Fig. 5. The correlation between the severity of heartburn and level of 6-SMT in the nigth urine

CONCLUSION:

The patients with GERD have a decrease in daily production of melatonin. There was found an inverse correlation between the level of melatonin and the severity of heartburn.

E-mail: olesjakarpovich@rambler.ru Tel.: +375 (33) 685 59 00 Adress: Belarus, Grodno, 230009 Gorkogo str., 80