

THE INDICES OF ION-REGULATING RENAL FUNCTION AT MELATONIN ADMINISTRATION ON THE BACKGROUND OF ANAPRILINUM ACTION UNDER CONDITION OF PINEAL GLAND HYPERFUNCTION**Authors:** V. SANDULYAK, V.P. PISHAK, M.I. KRYVCHANSKA, O.V. PISHAK, M. BRYTSIUK, A.D. YAKIMIUK**University:** Bukovinian State Medical University

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Abstract:

Introduction. In the nowadays therapeutic practice β -blockers are one of the most popular remedies, but their influence on the chronorhythms of main renal functions in conditions of pineal gland hyperfunction are still unknown. **Aim.** So, the main purpose of our work was to determine the changes in indices of ion-regulating renal function at anaprilinum administration in conditions of pineal gland hyperfunction. **Methods.** All experiments were conducted on 50 pubertal nonlinear male albino rats at conditions of constant darkness for seven days. Animals were divided into two groups – one obtained only anaprilinum, the other – melatonin on the background of β -blocker action. **Results.** The indices of ion-regulating renal function were characterized by hypernatremia. We also registered increase of sodium ions concentration in urine and its excretion which exceeded data of animals who were administrated only anaprilinum in the dosage 2,5 mg/kg of body weight without melatonin introduction (0,5 mg/kg) for 33%, but was twice less than in case of control group of animals. Administration of melatonin (0,5 mg/kg) on the background of anaprilinum action (2,5 mg/kg) led to decrease of sodium ions proximal transport for 47% if compare with control group of animals. Acrophase was registered at midnight, bathyphase – at 8.00 a.m. and midday. An average level for a day was $1,0 \pm 0,09$ mmol/2 hours/100 g, the amplitude of the rhythm – $26,5 \pm 3,07\%$. Distal sodium ions transport after melatonin administration (0,5 mg/kg) has changed in the same manner. Phase changes of rhythm structure also took place, the highest level was registered at 24.00, the lowest – at 8.00 a.m. that coincides with the rhythm of secretion of endogenous melatonin. Mezor of the rhythm was $88,9 \pm 3,86$ mkmol/2 hours/100 g, amplitude – $12,1 \pm 3,62\%$. This index is 34% less than in control group, and only 2% less than in animals, which did not have indole, mentioned above. **Conclusion.** We arrived at the conclusion that melatonin partially prevents disturbances of renal functions, caused by the action of anaprilinum in conditions of pineal gland hyperfunction.

Keywords: Renal function, melatonin, anaprilinum, pineal gland hyperfunction**Contact authors at:** sandulyak_vadym@bigmir.net