

CHRONORHYTHMS OF CARRAGENIN AND ARCOXIA ACTION

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The interest in the study of chronobiology, chronopathology and chronopharmacology has substantially increased in the last 30-40 years and it puts the task of studying the temporal characteristics of the action of medicines and agents that are used to model a particular pathology.

The aim of the study was to establish seasonal and circadian (daily) rhythms of action of carrageenan and arcoxia. Carrageenan edema over the years is one of the classical models for the study of antiexudative activity of nonsteroidal antiinflammatory drugs (NSAIDs). Carrageenan was introduced to rats as 1% solution in autumn and winter at 7 and 22 o'clock, as rats have night life chronotype. Measuring the size of edema in conventional units (c. u.) was carried out mechanically. The obtained data show that after the introduction of 1% solution of carrageenin into female rats at 22 o'clock in autumn the acrophase (maximum value) of the inflammatory edema was observed at the fifth hour after administration and amounted $55,6 \pm 1,25$ c. u.

After administration at 7 o'clock in the morning acrophase was observed on the fourth hour and amounted $57,67 \pm 1,66$ c. u.. In winter carrageenan was administered at 22 o'clock also, but acrophase shifted and was observed on the fourth hour $51,5 \pm 0,33$ c. u. After administration of carrageenin at 7 o'clock, acrophase of inflammatory edema was observed at third hour and amounted $46,83 \pm 0,54$ c. u.

Also, we investigated the activity of Arcoxia 10 mg / kg administered 1 hour before the time of inflammatory edema acrophase. Effectiveness of the drug at the peak of the inflammatory process amounted as follows: the introduction of carrageenan at 7 o'clock in the autumn – $47,26 \pm 5,47\%$, at 22 o'clock – $61,09 \pm 2,66\%$, and in the winter – $48,89 \pm 1,46\%$ and $56,58 \pm 2,85\%$, respectively.

These data confirm the facts that the inflammatory processes are most pronounced in the autumn, and the dosing of NSAIDs especially in autumn and winter are similar what is confirmed by the comparable activity of the drug in these seasons.

The findings suggest the need to study the temporal features of the proinflammatory agents' action as well as the development of the most rational appointment of NSAIDs.