

ISSN 2509-4327 (print)
ISSN 2510-4780 (online)

Inter
GING



Deutscher Wissenschaftsherold German Science Herald

№ 2/2017

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Impressum

Deutscher Wissenschaftsherold – German Science Herald

Wissenschaftliche Zeitschrift

Herausgeber:

InterGING

Sonnenbrink 20

31789 Hameln, Germany

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Marina Kisiliuk

Korrektur:

O. Champela

Gestaltung:

N. Gavrilets

Auflage: № 2/2017 (Juli) – 25

Redaktionsschluss Juli, 2017

Erscheint vierteljährlich

Editorial office: InterGING

Sonnenbrink 20

31789 Hameln, Germany

Tel.: + 49 51519191533

Fax.: + 49 5151 919 2560

Email: info@dwherold.de

Deutscher Wissenschaftsherold - German Science

Herald is an international, German/English language, peer-reviewed, quarterly published journal.

№ 2 2017

Passed in press in Juli 2017

Druck: WIRMachenDRUCK GmbH

Mühlbachstr. 7

71522 Backnang

Deutschland

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INDEXING: Google Scholar, WorldCat, InfoBase Index, Journal Index, Citefactor, International Scientific Indexing, JIFACTOR, Scientific Indexing Services, International Institute of Organized Research.



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RENAL TISSUE FIBRINOLYSIS AGAINST THE GROUND OF STRESS AND XENOBIOTICS

Abstract. *The article presents the results of experimental studies concerning the investigation of a combined impact of stress and metal chloride compounds – of lead and aluminum on the renal tissue fibrinolysis of albino rats. The dependence of the process intensity of the renal tissue fibrinolysis of animals under the effect of stress and metal salts on the stages of daily period was found.*

Key words: *chronobiology, tissue fibrinolysis, intoxication, stress, metal salts.*

Introduction. Diagnostics of early signs of nephropathy caused by stress and metal salts does not always enable to evaluate the degree of severity and dynamics of structural-functional changes of the biological systems timely [1, 5]. To detect reorganization of the renal functions in case of exogenous intoxications application of chronorhythmological methods with the aim of early diagnostics, prevention and treatment of renal pathology is essential [2, 3].

Development of pathological conditions promotes changes of biological rhythmicity of the body and its functions. The study of these phenomena is the basis of chronopathology. The subject of this study is analysis of the ways and mechanisms of deviation occurrence in biological rhythms from their normal course and the role of these disorders in pathogenesis of diseases [1, 4].

The pineal gland was found to participate in the processes of adaptive self-regulation of the body in case of exogenous intoxications. Although, the regularities of chronobiological regulation of the renal function according to the changes of the daily cycle remain insufficiently investigated. Clarification of this issue is of an important theoretical and practical value, as it will enable to improve the methods of diagnostics, prevention and treatment of renal pathology considering dependence of its peculiarities of occurrence and course on daily phases.

Objective: to detect circadian peculiarities of the renal tissue fibrinolysis within the norm and in case of the impact of stress and aluminum and lead chlorides on the body.

Materials and methods. The experiments were conducted on mature male albino rats in three series. In the first series the daily rhythmical organization of the renal tissue fibrinolysis was

studied when a negative exogenous effect was absent (the control group).

In the second series a pathogenic effect of metal salts on the chronorhythmical order of the renal tissue fibrinolytic condition of the albino rats was studied. During 14 days the rats were given minimal doses (DLmin) of aluminum chloride compounds (AlCl₃) – 200 mg/kg and lead (PbCl₂) – 50 mg/kg every day intragastrically [6, 7].

In the third series the peculiarities of fibrinolytic changes in the renal tissue were investigated under conditions of stress and combined action of the metal salts.

The experimental studies and animal euthanasia were conducted according to the International Principles of the European Convention for the Protection of Animals Used for Experimental and Scientific Purposes (Strasbourg, 1986). The experiments were performed 14 days after introduction of aluminum and lead chlorides under condition of water induced diuresis at the following hours: 8 a.m., 2 p.m., 8 p.m. and 2 o'clock at night.

The condition of enzymatic and non-enzymatic fibrinolysis was evaluated according to azofibrinolysis ("Simko Ltd.", Lviv). The intensity of the renal tissue fibrinolysis was evaluated by the degree of staining of the solution in alkali medium. Due to azofibrinolysis with presence of ϵ -aminocaproic acid as an inhibitor of enzymatic fibrinolysis non-enzymatic fibrinolysis is detected, and without it – total fibrinolytic activity (TFA). The difference between these indices reflects the condition of enzymatic fibrinolysis: $TFA - NEA = EF$ (enzymatic fibrinolysis) [3]. The results of the study were statistically processed by means of "Cosinor-analysis" method and parametric methods of variation statistics.

Results and discussion. The results of chronobiological experiments found that fibrinolytic activity (FA) of the renal tissue by the kidney physiological activity depends on an accurate organization according to daily changes. The analysis of the mechanisms of enzymatic and biochemical reconstructions gives the evidence to suggest regulated chronorhythmic order of the renal functions.

The relation between the daily fluctuations of fibrinolytic activity with the adrenal cortex activity was found. The level of fibrinolytic activity of the renal tissue is connected with changes of light during 24 hours [1, 3].

Thus, in the 4 first series, synchronous daily variations of fibrinolysis activity in the renal cortex of albino rats is found in case of a combined impact of stress and metal salts. The indices of fibrinolysis changed at 2 p.m. and 8 p.m., and they increased at 2 o'clock at night. The mesor and amplitude of fibrinolysis rhythm in the cortical layer became 12% less. The above effects are caused by a number of adaptive-compensatory and decompensatory mechanisms of the renal function which are directly connected with the pineal gland.

Similar changes were found in the medullar layer of the kidney in case of aluminum-lead intoxication of the body. Chronorhythmic disorders of tissue fibrinolysis were registered that were reflected by a reliable shifting of the medullar tissue fibrinolysis at 8 p.m. The mesor and amplitude of fibrinolysis rhythm in the medullar layer became 29% less. It might be explained by the fact that adaptive-compensatory properties decrease during the light period of time and are renewed after dark at 2 o'clock at night.

In case of stress and a combined action of Al+Pb salts in experimental animals these indices of fibrinolytic activity in the papillar layer of the kidney changed more at 8 a.m. and 2 o'clock at night. The mesor and amplitude of rhythm became 30% less. Exogenous intoxication of the bodies with metal salts and effect of stress cause biochemical changes in the renal tissue, and fibrinolytic activity in particular, resulting in disorders of chronorhythmic organization of the renal function, that in its turn leads to deposits of fibrin in the renal structures with fibrinoid degeneration of tissues [3, 6].

Inhibition of the fibrinolytic system with the formation of tubular-interstitial syndrome is the most important on the level of the renal papilla and renal medullar substance, that can result in the development of thrombosis, urothrombosis followed by fibrin transformation into collagen [3].

Conclusions. The results of the studies presented have found a close relation between the daily changes of the parameters of the renal tissue fibrinolysis characterizing functional-biochemical condition of the kidneys stipulated by the term of photoperiod and the impact of stress and metal salts.

References

1. Anohina SI, Gorban EM. Vpliv melatoninu na gemostaz, plazmoviy fibrinoliz i fibrinolitchnu aktivnost tkanin vnutrlshnih organiv bilih schurlv. *Buk. med. vlsnik*. 2002;6(3-4):117-20.
2. Visotska VG. Dinamika tsirkadlannih perebudov fibrinolitichnoyi aktivnosti sechil ta plazmi krovil bilih schuriv pri poednaniy diyi stresu ta soley vazhkih metaliv. In: Aktualni pitannya klinichnoyi ta eksperimentalnoyi meditsini. *Materlali 86-pidsumkovoyi naukovo-praktichnoyi konferentsiyi naukovtsiv BDMU; 2005; Chernivtsi. Chernivtsi: Medunlversitet; 2005. 98-103.*
3. Miheev AO, Vlasik LI, Magalyas VM. Osoblivostl pereblgu proteolizu, fibrinolizu i perekisnogo okisnennya lplidiv u klrkovly rechovinl nirok schurlv rlnzogo viku. *Odeskiy med zhurn*. 2000;6(62):11-13.
4. Homenko V.G. Naslidki talotoksikozu u ditey pislya Chernivetskoyi tragediyi u voseni 1988 roku. *Materlali 96-Yi pidsumkovoYi naukovoYi konferentsiyi profesorsko-vikladatskogo personalu BDMU; 2015 feb 16, 18, 23; Chernivtsi. Chernivtsi: 2015. 56 p.*
5. Homenko VG. Hronoritmlchnl perebudovi funktsly nirok za umov Imobilizatslynogo stresu. *Klinlchna ta eksperimentalna patologlya*. 2015;14(1):173-7.
6. Khomenko VG. Chronorhythmicity of function kidney in pathology. *Medychniyi forum*. 2015;4(4):79-81.
7. Khomenko VG. Toxic effects of heavy metals on the chronorhythmicity of kidneys. *Pivdenoukrayinskyi medychniyi zhurnal*. 2015;10(10):93-4.

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Deutscher Wissenschaftsherold German Science Herald

Bibliographic information published by the Deutsche Nationalbibliothek
The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed
bibliographic data are available on the Internet at <http://dnb.dnb.de>

№ 2/2017 – 25
Passed in press in Juli 2017



WirmachenDruck.de

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