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*Pathophysiology and Pharmacy:
ways of integration*



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Патофізіологія і фармація: шляхи інтеграції : тези доповідей VII Національного конгресу патофізіологів України з міжнародною участю (5-7 жовтня 2016 р.). – Х. : Вид-во НФаУ, 2016. – 279 с.

Збірник містить матеріали VII Національного конгресу патофізіологів України з міжнародною участю: «Патофізіологія і фармація: шляхи інтеграції». В матеріалах Конгресу розглянуто сучасні проблеми патофізіології: молекулярно-генетичні механізми розвитку та протекції захворювань; патофізіологія серцево-судинної системи та крові, гемотрансфузіологія; патофізіологія нервової системи, екстремальних станів та стресу; патофізіологія дихання, гіпоксія; патофізіологія ендокринної та репродуктивної систем; патофізіологія травної системи; патофізіологія сечовидільної системи; патофізіологія пухлинного росту; імунопатологія; фундаментальні та прикладні аспекти запалення; вікова патофізіологія; клінічна патофізіологія; зв'язок патофізіології і сучасної фармацевтики; актуальні проблеми фармакології, фармакогеніки та фармакогенетики.

Для широкого кола наукових та практичних працівників медицини та фармації.

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Pathophysiology and Pharmacy: ways of integration: abstracts of VII National congress of pathophysiology of Ukraine with international participation (5-7th October 2016). – Kh. : NUPh, 2016. – 279 p.

Book of Abstracts includes materials of VII National congress of pathophysiology of Ukraine with international participation: "Pathophysiology and Pharmacy: ways of integration". In materials of Congress discussed the modern problems of pathophysiology: molecular-genetic mechanisms of disease and their protection; pathophysiology of cardiovascular and blood, haemotransfusiology; pathophysiology of nervous system, extreme conditions and stress; pathophysiology of respiration, hypoxia; pathophysiology of endocrine and reproductive systems; pathophysiology of digestive system; pathophysiology of urinary system; pathophysiology of tumor growth; immunopathology; fundamental and applied aspects of inflammation; pathophysiology of age; clinical pathophysiology; connection between pathophysiology and modern pharmaceuticals; actual problems of pharmacology, pharmacogenomics and pharmacogenetics.

For a wide audience of scientists and practitioners of medicine and pharmacy.

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PROTEINURIA PREVENTION AS A MAIN INDEX OF ANTIHYPOXANT SODIUM POLY-(2,5-DIHYDROXYPHENYLENE)-4-THIOSULFATE ACID NEPHROPROTECTIVE PROPERTIES IN EXPERIMENTAL ACUTE RENAL INSUFFICIENCY

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Purpose and task of work. To submit the presence of nephroprotective properties of the known antihypoxant sodium poly-(2,5-dihydroxyphenylene)-4-thiosulfate acid (PDT-Na) with a help of criterion characterized its normalizing effect on the principal signs of kidney failure proteinuria, cause the loss of proteins with the urine is the most important diagnostic parameter of the acute renal failure (ARF).

Materials and methods. Experiments performed on 72 white rats of both sexes weighing 150-170 g with established European standards of bioethics. Used modern and most informative model of acute toxic kidney damage of various origins: glycerol (myoglobinuric) ARF (10 ml/kg intramuscularly ones/day), ethylenglycol ARF (intra gastric administration in dose 8 ml/kg, 14 days) and hentamycine nephropathy (4% solution intramuscularly, 80 mg/kg ones/day, 14 days). Under the conditions of our experimental studying the effect of antihypoxant PDT-Na (90 mg/kg ones/day during 14 days, intra gastric) compared with effect of vegetable diuretic with hypoazotemic action - Hofitol (1.36 ml/kg ones per day during 14 days, intra gastric) by investigation of total protein content in serum and urine. In the collected urine and serum spectrophotometrically on the digital spectrophotometer PD-303 (Apel, Japan) according to the instructions on the use of standard test kits reagents "Spayn-lab" (Kharkiv, Ukraine) determined the concentration of total proteins in serum (biuret colorimetric method) and urine (photometric method by reaction with sulfosalicylic acid).

The studying results. Acute toxic renal lesions that are simulated in our experiments leads to proteinuria that is usually caused by kidney damage and reduced ability of proximal tubule protein reabsorption. In our experiments hypoproteinuric activity of PDT-Na characterized by decreased concentration of total proteins in the urine by 44-45% relatively to pathology, and reliably corresponds to the intact level. Due to changes in tubular reabsorption statistically marked significant normalization of total protein in serum. This indicator under PDT-Na influence by 12-22% higher than the same in pathology. Data shows that by studied parameters hypoproteinuric activity of PDT-Na in the conditions of our experiment in 19-27% of total protein in the urine and in 15-19% of total protein in serum is better than appropriate of comparator Hofitol.

Conclusions. Given the experimental data, confirmed antihypoxant PDT-Na normalizing effect on the total protein level in serum and urine with toxic ARF of different genesis, that is statistically significant. Therefore, nephroprotective activity of studied antihypoxant drug confirmed significant proteinuria prevention as one of the principal signs of ARF.

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