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TURKISH MEDICAL STUDENT JOURNAL

Ministry of Health of Ukraine
Ukrainian Medical Stomatological Academy

# ABSTRACT BOOK

of 2nd International Medical Students Conference
in Poltava in honour of 100th anniversary of
Ukranian Medical Stomatological Academy

# IMEDSCOP 2021

25-26 of March 2021
Poltava, Ukraine

2-га Міжнародна студентська наукова конференція «International Medical Students Conference in Poltava 2021» (IMEDSCOP 2021) включена до плану проведення наукових, науково-технічних симпозіумів, з'їздів, конференцій, семінарів, нарад в Україні в 2020-2021 рр. (посвідчення №362 від 10 вересня 2020 р.)

future treatment and surveillance. The prognosis for the combination of proteinuria with haematuria is significantly worse than that for proteinuria alone.

**Aim of research:** The aim of this study has been to fortify frequency of proteinuria and microhaematuria in population with high risk of CKD.

**Materials and methods:** The study was conducted in two phases. In the first phase was conducted a systematic review among 815 citizens. In second phase was selected 95 people with suspicion of balcanic endemic nephropathy (BEN) of Donje Crnjelovo village, which is well known endemic area of BEN, from March to April 2019. For any of them we got some anamnestic data by questionnaire, also we have been measured blood pressure, by indirect auscultation methods and analyzed some laboratory parameters in urine (proteins, haemoglobin).

**Results:** From 95 people with suspicion of CKD 54,1 percent has high blood pressure. From personal anamnesis it is shown that 11,4 percent has diabetes mellitus, 19,9 percent of all examined people in second phase have some kidney disease, and that 18 percent have someone in family with CKD. Proteinuria, microhaematuaria, or both of them were estimated in 40 percent of all examined people in second phase.

**Conclusion:** Our result suggests that, frequency of preoteinuria and microhaematuria are on high level in population with high risk of CKD.

**Key words:** Chronic kidney disease, proteinuria, microhaematuria, Balcanic endemic nephropathy

## INVESTIGATION OF ANTIOXIDANT ACTIVITY OF NEW XANTHINE XENOBIOTICS

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**Relevance:** Recent studies have shown that in the pathogenesis of most diseases (cardiovascular, nervous, liver, lung diseases), which determine the main rate of mortality and disability, oxidative stress plays an important role. The latter includes free radical (FRO) and peroxide oxidation, leading to membrane damage and cell death.

The search for antioxidant compounds that can decrease pathological biochemical processes by oxidative stress and, consequently, can provide a prophylactic and therapeutic effect, is very important for modern medicine.

Therefore, pharmacological agents for metabolic correction of conditions caused by oxidative stress need to be intensively developed. Synthetic drugs with antioxidant properties, like xanthine xenobiotics, are attracting more and more attention of scientists.

**Aim of the research:** Investigation of the antioxidant properties of newly synthesized 3-tolyl-8-propylxanthine derivatives, which was performed using in vitro methods (inhibition of oxidative modification of proteins, initiation of lipid peroxidation and inhibition of NO• radical).

**Materials and methods:** Study of antioxidant activity to inhibit protein oxidative modification (POM): to identify the depth of the pathological process and the degree of development of oxidative stress in cells determination of the oxidized amino acid residues of proteins created by the initiation of free radical oxidation by Fenton in vitro reaction(2,4-DNPH) should be performed.

Study of antioxidant activity by non-enzymatic initiation of free radical lipoperoxidation: a suspension of egg lipoproteins was used as a substrate. The free radical oxidation reaction was initiated by the addition of 0,025M $FeSO_4$•7 $H_2O$ solution followed by incubation of the resulting mixture. The reaction was stopped by adding a 50% solution of trichloroacetic acid with disodium EDTA. The stained malonic dialdehyde complex with thiobarbituric acid was extracted by adding butan-1-ol. The concentration of malonic dialdehyde was estimated by spectroscopic measurement of the absorption of the sample at 532 nm. Dibunol was used as a reference drug.

Studies of antioxidant activity by inhibiting NO• radical were performed by photoinduction of sodium nitroprusside, accompanied by the accumulation of NO• radical, which is evaluated by the rate of oxidation of ascorbate, measuring the optical density of the sample at 265 nm. N-ACC was used as a reference drug.

**Results:** The study showed that all newly synthesized compounds show the high level of antioxidant activity compared to reference drugs.

**Conclusions:** Pharmacological screening of newly synthesized 3-tolyl-8-propylxanthine derivatives for antioxidant activity was performed. The relationship between antioxidant action of synthesized compounds and their structure is analyzed. According to the obtained results of in vitro studies of AOA, the most active compounds were selected for further studies.

**Keywords**: Xanthine, antioxidant activity, oxidation.