

## NONSTEROIDAL ANTI-INFLAMMATORY DRUGS WITH GASTROPROTECTIVE PROPERTIES

Mellus O. O.

Scientific supervisor: prof. Derymedvid L. V., assoc. prof. Vereitinova V. P.

National University of Pharmacy, Kharkiv, Ukraine

melyus.elena@mail.ru

**Introduction.** Nonsteroidal anti-inflammatory drugs (NSAIDs) are among the most popular drugs in the world and are used in the treatment of many inflammatory diseases. However, the use of NSAIDs limits the high incidence of adverse reactions from the gastrointestinal tract, especially the stomach. Creation of a new class of NSAIDs - selective inhibitors of cyclooxygenase 2 (COX-2) - did not solve the problem of gastotoxicity in patients with risk factors for this pathology, although it reduced the incidence of complications. At the same time, many COX-2 inhibitors have cardiovascular (CV) adverse events. An alternative approach is the use of nonclassical NSAIDs with gastroprotective properties.

**Aim.** Analyze the assortment of existing NSAIDs, the results of randomized clinical trials and preclinical studies, and identify new drugs with a non-classical mechanism of action

**Results and discussion.** Representative of this class of drugs is the precursor of tolmetine - Amtolmetinum guacyl (AMG). AMG belongs to the group cyclooxygenase inhibiting NO-donating drugs (CINODs). In the field of inflammation and tissue damage, NO can act as a mediator of pain, which causes sensitization and direct stimulation of nociceptors. In the gastrointestinal mucosa NO performs a protective function, enhancing blood flow, repair of epithelial cells, preventing the development of inflammation and blocking free radical processes.

Vanilloid receptors (TRPV1 and others) are the original "integrators" of pain sensitivity: They work both under the influence of specific ligands (vanilloid) and under the influence of a variety of nonspecific stimuli (acidosis, fever, ion imbalance). Due to the vanillin group in the molecule, AMG binds to vanilloid (capsaicin) receptors and causes the release of the CGRP protein (calcitonin gene related peptide, related to calcitonin) followed by a local increase in the production of nitric oxide (NO), which compensates for the effect of prostaglandin deficiency due to inhibition COX-1. Amtolmetinum guacyl also stimulates the release of bicarbonate, which is the basis of the alkaline buffer of gastric juice.

**Conclusions.** AMG has anti-inflammatory, analgesic, antipyretic and has a gastroprotective effect. The use of drugs with a similar mechanism of action makes it possible to increase the effectiveness and safety of pharmacotherapy of inflammatory diseases.

## RACIAL/ETHNIC ASPECTS OF HYPERTENSION

Nai Abraham

Scientific supervisor: assoc. prof. Myronchenko S. I.

National University of Pharmacy, Kharkiv, Ukraine

Abraham.nai123@gmail.com

**Introduction.** The prevalence of arterial hypertension is higher in blacks than in other race/ethnic groups, with environmental and genetic risk factors playing an important role. In the United States African Americans develop hypertension at an earlier age than whites, have much higher average blood pressure readings, a greater likelihood of refractory hypertension, and greater rates of premature hypertensive complications. Such differences indicate the possibility of the existence of basic pathophysiological differences between the ethnic population, which caused changes in the recommendations for treatment.

**Aim.** Carry out an analytical review of hypertension development mechanisms and the most promising methods of its treatment in African Americans.

**Materials and methods.** Data analysis of literature and Internet sources.

**Results and discussion.** Pathogenesis of hypertension in African Americans is complex and includes the high incidence of obesity, salt sensitivity and the activation of the renin-angiotensin-aldosterone system (RAAS), endothelium vascular response. Besides African Americans are less likely to have a night time lowering of blood pressure, they have proteinuria earlier. Plasma renin activity in blacks

has been consistently reported to be lower than in whites. Low systemic plasma renin activity in blacks may not be the primary abnormality, but rather the reflection of an overactive RAAS at the tissue level in the kidney. Genetically engineered blood pressure levels during the formation of the African diaspora (active migration from West Africa to North America) contributed to the selective expression of the corresponding genes leading to salt retention in the body. This complexity requires a therapeutic combination that includes changes in dietary habits and appropriate antihypertensive regimes.

**Conclusion.** Obesity, salt sensitivity, RAAS, and endothelial activation represent different factors affecting the pathogenesis of hypertension in African Americans. Further research in various ethnic/racial groups is needed to understand the differences in risk factors for cardiovascular disease and to develop optimal medical methods specifically designed for these groups.

## **THE EFFECT OF THE MOBILE GADGETS ON THE DEVELOPMENT OF DESYNCHRONOSIS AMONG YOUTH**

Ochkovskaya D., Pasichnyk D.

Scientific supervisor: assist. Ostapets M. O.

National University of Pharmacy, Kharkiv, Ukraine  
marina.ostapets.22@gmail.com

**Introduction.** The human body as a whole, can exist only with a certain ratio of various vibrational processes in cells, tissues, organs and functional systems, and their synchronization with the environment. In the process of a violation of the coordination of external and internal biorhythms, desynchronizes may occur.

Today, there is a tendency towards the rapid development of the use of mobile gadgets and, consequently, the development of addictive (dependent) behavior. Young people are no longer attracted by "live" communication; they are more pleased with "deepening to the virtual world." Thus, before sleeping, they spend a lot of time in their mobile gadgets and forget about the time and often do not regulate the correct mode of biorhythm "day and night". As a result, a disturbance of sleep develops, which leads to the development of desynchronosis, which, if prolonged, may manifest itself to the decrease in mental and physical capacities, and in a more mature age it can lead to a significant decline in the quality of life. That is why the effect of mobile gadgets on the violation of biorhythm "day and night" is an actual problem for modern theoretical medicine.

**The aim of the work** is to find out the possible negative effect of mobile gadgets on sleepy disturbance and, consequently, on the development of desynchronisation among students.

**Materials and methods.** The following methods were used: theoretical analysis in scientific sources of domestic and foreign publications, questionnaires, statistical processing of dates.

In the anonymous questionnaire, 100 volunteer students of the 1<sup>st</sup> and 2<sup>nd</sup> courses of the NPhU participated. The survey included 2 stages: the first one which determined the student's biorhythm and the second is about the presence of additive behavior on mobile gadgets.

**Results and discussion.** As a result of a survey of the 1<sup>st</sup> and 2<sup>nd</sup> years students on the establishment of biorhythm, it was found out that 78% of them are "owls"; and 22% of them are "larks".

At the second stage it was discovered that 60% have additive behavior on the mobile gadgets, and 30% have a tendency for its development. Among the additive students with two types of established biorhythms, it was found out that they cannot fall asleep without a phone and immediately after they wake up, they take their mobile gadgets up. In addition, they noted that when they are "on the phone", they have not noticed neither how the time is passing nor what is happening around. As a result, this group of students were marked with a sharp decline in mental activity, namely: concentration, thinking, attention and memory. They constantly experienced drowsiness, laxity, decreased physical activity, and often suffered from acute respiratory infections.

In the group of "larks" their perspiration processes were delayed for several hours, which also indirectly indicates a violation of the physiological biorhythm.

In this case, all polls claimed that if their gadgets were out of order for a few days, their well-being was improved, in particular due to the fact that they were falling asleep without any interruption.