

background. As a result, those who suffer from chronic sleep loss and/or stress are more vulnerable to infectious infections.

The production of melatonin is significantly impaired in people with chronic insomnia. The longer a person has experienced symptoms of insomnia, the greater the effect on melatonin concentration. However, in the case of chronic stress, initially, the concentration of melatonin rises significantly as a protective mechanism exerting anti-inflammatory and antioxidant effects, dropping sharply after. So, restoring (even partially) normal sleep habits and reducing anxiety through melatonin may have a significant public health effect during current COVID-19 crisis.

Thus, we may be able to prevent the development of severe disease symptoms in coronavirus patients, reduce the severity of their symptoms, and/or reduce the immuno-pathology of coronavirus infection on patients' health after the active phase of the infection is over by using the safe over-the-counter drug melatonin.

Vlasova K.V.

SUPRAOPTIC NUCLEI RECEPTORS DENSENESS AT NIGHT PERIOD UNDER LIGHT EXPOSURE

Department of Medical Biology and Genetics

Bukovinian State Medical University, Chernivtsi

Melatonin is a hormone that your brain produces in response to darkness. It helps with the timing of your circadian rhythms (24-hour internal clock) and with sleep. Being exposed to light at night can block melatonin production and it affects the time organization of a large number of central and peripheral functions. It is also a powerful antioxidant mediator and has roles in other physiologic pathways. Melatonin deficiency is associated with metabolic derangements including glucose and cholesterol dysregulation, hypertension, disordered sleep and even cancer.

Our aim was to check the reaction on light stress of melatonin receptors 1A type in magnocellular neurons of supraoptic nuclei (SON) of the hypothalamus. Objective – to detect the role of light on melatonin receptors of supraoptic nuclei. White male rats were divided into two groups with the same biomaterial sampling time at 2 o'clock of midnight on the eighth day. The difference between groups is the light exposure on laboratory animals. The brain samples were fixed with formalin, dehydrated and it was embedded in paraffin. To detect melatonin receptors denseness was used specific polyclonal antibodies produced by Abcam.

Staining of SON neurocytes obtained denseness of melatonin receptors at 02.00 A.M. – $0,488 \pm 0,0024$ under complete darkness whereas in the group of animals with light exposure influence at 02.00 A.M. the results of denseness of receptors – $0,216 \pm 0,0017$ in SON indicating the existing primary signs of cellular disfunctions.

Saving the biorhythm is extremely important as changing the functioning of the hypothalamus SON neurocytes is likely to have significant consequences associated with an imbalance of homeostasis. Hence all of the above mentioned and further more menaces were an absolute outcome of a prolonged and intense disturbance in the daily routine and habits which must be subjected in order to do the needful.

Yosypenko V.R.

SUBMICROSCOPIC CHANGES OF THE LATERAL PREOPTIC NUCLEUS OF THE HYPOTHALAMUS UNDER LIGHT STIMULATION

Department of Medical Biology and Genetics

Bukovinian State Medical University

Today, there is an increase in the number of elderly people among the world's population. Typical problems of this age group are impaired quality and/or duration of sleep, which can affect the development of pathological processes and overall health. Sleep is an extremely complex genetically determined cyclic process that is regulated by homeostatic and circadian components involving various neural structures, among which the lateral preoptic nucleus (LPO) of the hypothalamus plays a key role.