

agents. The goal of conservative therapy is to correct valvular insufficiency of the deep, saphenous and peripheral veins; improvement of microcirculation and tissue perfusion; stimulation of lymphatic drainage; inhibition of leukocyte activation and synthesis of inflammatory mediators.

Conclusions. Thus, high prevalence, rapid rejuvenation, as well as a significant number of relapses require modern diagnostics and adequate treatment of varicose veins, which is an important medical and social problem.

THE UBIQUITIN–PROTEASOME PROTEOLYTIC PATHWAY IN NORMAL AND DISEASE STATES

Jedio Bernard Dadi

Scientific supervisor: associate professor Myronchenko S.I.

National University of Pharmacy, Kharkiv, Ukraine

jedidadi.jd@gmail.com

Introduction. Proteolysis is essential for numerous developmental and physiological processes. However, dysregulation of protease activity underlies many diseases and pathological conditions, including cancer, inflammation and infection. In all tissues, the majority of intracellular proteins are degraded by the ubiquitin (Ub)–proteasome pathway (UPP).

Aim. Carry out an analytical review of the role of protein degradation by the ubiquitin–proteasome pathway in normal and disease states.

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

Results and discussion. Cells contain multiple proteolytic systems to carry out the degradation process and complex regulatory mechanisms to ensure that the continual proteolytic processes are highly selective. The pathological states associated with the ubiquitin system can be classified into two groups: (a) those that result from loss of function-mutation in the ubiquitin system enzyme or in the recognition motif in the target substrate that lead to stabilization of certain proteins, and (b) those that result from gain of function-abnormal or accelerated degradation of the protein target. Studies that employ targeted inactivation of genes coding for specific ubiquitin system enzymes and substrates in animals can provide a more systematic view into the broad spectrum of pathologies that may result from aberrations in ubiquitin-mediated proteolysis. Therefore, excessive breakdown of cell constituents is prevented. Because the UPP is responsible for the turnover of so many different cellular proteins, there are critical mechanisms that regulate its function precisely. The importance of UPP lies in the circulation of transport proteins, in the presentation of antigens to the immune system, and in how uremia activates UPP, causing muscle depletion, because these functions are of particular interest to nephrology. However, the UPP also plays important roles in the regulation of other cellular functions, ranging from the control of the cell cycle to activities that promote cancer. Indeed, inhibitors of proteasome activity, the final component of the pathway, have emerged as novel chemotherapeutic agents.

Conclusions. Better understanding of the processes and identification of the components involved in the degradation of key regulatory proteins will lead to the development of mechanism-based drugs that will target specifically only the involved proteins.

MOLECULAR MECHANISMS OF AGING

Kamishan A. S.

Scientific supervisor: Phd, ass.prof. Chikitkina V.V.

National University of Pharmacy, Kharkiv, Ukraine

valentina.chikitkina@gmail.com

Introduction. Aging is a complex of various mechanisms at the molecular, cellular, organ and system levels, which lead to irreversible changes in organs and tissues with the extinction of body functions. Interest in the subject of aging does not diminish for many centuries. Although modern