Aging is a destructive process leading ultimately to a decreased reliability of the self-regulation of metabolism and function. This, in turn, results in the decrease in the adaptive capacities of the body and the development of age-related pathology. Changes in the neurohumoral regulation play a significant role in the decrease in the adaptive capacities of the whole organism. This is why it is essential to investigate both the general characterization of changes with age in the neurohumoral regulatory systems and the shifts in their individual links. Age-related changes of the neurohumoral regulation determine the changes occurring in psychics, emotions, stress endurance, or maintenance of the homeostasis.

The symposium on ‘Neurohumoral Mechanisms of Aging’ was held on October 14-16th, 1986, in Kiev. It was initiated on the initiative of the Institute of Gerontology of the USSR Academy of Medical Sciences, whose staff had been engaged in the elaboration of this problem during many years. The special issue of Gerontology presents the reports held at this symposium. This symposium was attended both by researchers (physiologists, biochemists, endocrinologists) and by clinicians. This allowed not only to consider the role of neurohumoral shifts in the mechanisms of aging, but also to define their contribution to the development of age-related pathology. The first contribution raised a number of disputable questions on this problem and discussed the direction of its further elaboration. A series of the reports were devoted to the age-associated changes in the transmitter and hormone reception. Special attention was focused on the specificities of the neurohumoral regulation of the heart and liver in aging. Of great interest were the reports dealing with the role of changes in the neurohumoral regulation in the formation of age-associated pathology – atherosclerosis, ischemic heart disease and arterial hypertension.

At present it may sound trivial to study the aging processes at various levels of vital activity – molecular, cellular and systemic. Nevertheless, for the understanding of the aging of the organism it is important to investigate the neurohumoral mechanisms that integrate it into a single harmonious entity.

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