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For many years we have studied the regulatory peptides effects on the integration of nervous, endocrine and immune mechanisms in the pain-induced aggressive-defensive behavior in rat. 23 analogues of the natural hypothalamic-pituitary peptides and other peptides synthesized in the Russian Academy of Sciences and “Serva” were administered in intra-peritoneal and brain intra-ventricular injections. With the use of the modified foot-shock model the following regularities of peptide effects were revealed. (1) The key role in peptide effects is played by the L-arginine or L-lysine amino acids residues. In particular, only the administration of arginine containing peptides increased pain sensitivity and aggression, (2) binding of the tripeptide Pro-Gly -Pro to the amino acid (Arg) or oligopeptide (ACTH 4-7) essentially modifies the influence on the affective aggression, (3) the intensity of aggression depends on the excitability of the brain emotional negative system more than on pain perception. This was demonstrated due to effects of enkephalin analogues, (4) peptide effects seemed to be dependent on the brain locus of their primary application and (5) neuropeptide effects were more expressed in rats with the higher excitability of nociceptive, emotional, opioid and M-cholinergic systems. Since analogues of the natural peptides have been used, there is a reason to believe that obtained data make it possible to elucidate the mechanisms of the development of the pain-induced affective aggression and to develop means for its correction.

Biography

Severyanova L A has performed research at Kursk State Medical University and received her PhD and later Russian “Doctor of Medicine” at the Pavlov Institute of Physiology of the Russian Academy of Sciences. She has been the Head of the Department of Pathophysiology, Dean of the International Faculty, Professor of Pathophysiology and Honored Worker of Higher School. Her scientific interest is the integration of nervous, endocrine and immune mechanisms in the systemic reactions of the body. She has published more than 50 articles in reputed journals and three monographs.

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