BEHAVIORAL INVOLVEMENT OF IMIDAZOLINE SYSTEM

M. Nechifor, Diana Ciubotariu
University of Medicine and Pharmacy “Grigore T. Popa” – Iași
Faculty of Dental Medicine
Pharmacology Department

BEHAVIORAL INVOLVEMENT OF IMIDAZOLINE SYSTEM (Abstract): The imidazoline system consists in imidazoline receptors $I_1$, $I_2$ and $I_3$ and the active as well as that there are some endogenous ligands. We consider that one of the most important functions of this system is modulation of different types of behavior. Existent data show that $I_1$ and $I_2$ receptors have different effects on some behavior components, such as suicidal behavior, stress, anxiety, food intake etc. We consider that selective $I_1$ and $I_2$ agonists could become drugs to be used in the therapy of some behavioral disorders. The fact that some agonists or antagonists of imidazoline receptors have also effect on alpha-adrenergic receptors or MAO (monoamine oxidase) enlarges the use area of the compounds in behavioral disorders. 

Key words: IMIDAZOLINE RECEPTORS $I_1$ AND $I_2$, BEHAVIOR, DEPRESSION, FOOD INGESTION

The imidazoline system consists in imidazoline receptors $I_1$, $I_2$ and $I_3$ and the active endogenous substances acting on them and it represents an important system for regulating the cell functions. Existing evidence show the involvement of the importance of imidazoline in modulating central nervous system (1). One of the most important natural agonists is agmatine. The imidazoline system has at least two important characteristics: some agonist and antagonists also act on the alpha-adrenergic system and agmatine is synthesized out of arginine, which is also a source of nitric oxide. One of the important endogenous systems in our body is the imidazoline system. It is known that there are two types of well-described receptors for this system ($I_1$ and $I_2$ receptors), as well as that there are some endogenous ligands. Also, there are known certain types of different effects mediated through this biological system. One of the most important fields where the imidazoline system is known to be involved in is represented by human and animal behavior. Imidazoline system is important for both normal and pathological behavior. In case of certain neurological and especially psychiatric diseases, changes in the imidazoline system balance have been detected:

a. Involvement in depression and suicidal behavior;

b. Involvement in mood disorder;

c. Involvement in stress;

d. Involvement in the locomotor activity.

DEPRESSION AND SUICIDAL BEHAVIOR
One of the fields of real scientific interest is represented by the involvement of