REVIEW

NEURONAL BASIS OF NEUROLEPTIC-INDUCED EXTRAPYRAMIDAL SIDE EFFECTS

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The article reviews presently commonly accepted concepts of neuronal basis of neuroleptic-induced extrapyramidal side effects. The data obtained both, in humans and laboratory animals, point to the blockade of a large number of the striatal dopamine D2 receptors by neuroleptics as a primary cause of these disturbances. This phenomenon leads to the appearance of parkinsonian symptoms shortly after therapy commencement. On the other hand, chronic administration of neuroleptics evokes supersensitivity to dopamine connected with the increased number of D2 receptors and supersensitivity of D1 receptors, which can be significant for the development of tardive dyskinesia. Primary and secondary changes in the function of dopamine receptors lead to partially opposite, pathological changes in the activity of neuronal pathways connecting the basal ganglia. Besides functional changes, neuroleptic-induced lesions of the striatal neurons and genetic predispositions can also play a role in tardive dyskinesia.

Key words: neuroleptic, parkinsonism, tardive dyskinesia, supersensitivity to dopamine, D1 receptor, D2 receptor, basal ganglia, lesion, genetic predisposition