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# Ozone therapy in mitochondrial dysfunction abnormalities in major psychiatric disorders.

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## ABSTRACT

The pathogenesis of major psychiatric disorders has been highlighted in the last decade, in addition to neurobiochemical imbalances and the presence of multisystemic mechanisms, dominated by mitochondrial dysfunction, inflammatory processes, immune imbalances, ROS (Reactive Oxygene Species) hyperactivity and endothelial dysfunction.

This complex of multisystemic mechanisms results in incomplete therapeutic responses to therapeutic approaches based on the correction of homeostasis imbalances in biochemical systems. Partial correction of symptoms cannot balance multiple systemic dysfunctions and mitochondrial activity. In this context, there is a risk of neurodegenerative developments, which are announced by the occurrence of partial or total resistance to pharmacological therapies.

Ozone is a factor with antioxidant, antiapoptotic action and which improves autophagy, a phenomenon that can improve mitochondrial dysfunction. The balance between the therapeutic use of ozone doses can be shaped by the concomitant administration of antioxidants.

Psychotropic medication has a neurotoxic effect that potentiates ROS activity and the apoptotic mechanisms of neural structures, favoring brain structural alterations.

Pathogenic patterns of major psychiatric disorders suggest possible benefits of complementary therapies with ozone oxygen therapy, which could reduce the number of adverse neurodegenerative development.