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## MEETING ABSTRACTS

# OXIDATIVE STATUS ASSESSMENT OF RATS' BRAIN INJURY FOLLOWING SUBACUTE EXPOSURE TO K-OXIMES

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In this study, it has been investigated the oxidative status and morphological alterations in the brain of Wistar rats induced by repeated application of low doses of selected acetylcholinesterase reactivators - asoxime, obidoxime, K027, K048, K074, and K075. Each oxime (0.1 of LD50/kg *im*) was given 2 times per week for 4 weeks. The animals' whole-body, organ weight, oxidative status, as well as microscopic examination of the brain, were done on day 35 of the study. Markers of oxidative stress, lipid peroxidation (malondialdehyde (MDA) and advanced oxidation protein products (AOPP)), as well as the activity of antioxidant enzymes (catalase (CAT) and superoxide dismutase (SOD)), were measured in the brain homogenates (1,2). Brain alterations were quantified by semiquantitative grading scales – brain damage score (BDS) (3). Oxidative stress parameters MDA and AOPP were significantly elevated in the K075-treated group compared to the control group ($p < 0.001$). SOD activity was significantly higher in the K075-treated group ($p < 0.001$), without differences in CAT activity. In the same groups of rats, brain injuries were significantly more severe than those observed in animals receiving only asoxime or K027 ($p < 0.001$). Our results can help to predict likely adverse systemic toxic effects, and target organ systems, which are crucial for establishing risk categories, as well as in dose selection of K-oximes as drug candidates. (MFVMA01/23-25).

*Keywords: oximes; toxicity; pathohistology; brain; oxidative stress*

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