Orofacial Dyskinesia and Oxidative Stress Reserpine-induced in Rats: Beneficial Effects of w-3

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Several neurological diseases are related to oxidative stress (OS) and neurotoxicity. Our objective was to evaluate the preventive effects of w**-3** on an OS animal model (reserpine-induced orofacial dyskinesia-OD). In this model, the increased dopamine metabolism can generate OS and neuronal degeneration, causing OD, catalepsy and oxidative stress, evaluated by vacuous chewing movements (VCMs), immobility time and lipid peroxidation, respectively. ω-3 is an essential fatty acid necessary to the brain neuronal integrity. Data were analyzed by one-way ANOVA followed by Duncan's test ($p<0.05$). The results of this study showed that reserpine improves the immobility time by the catalepsy test (49,71±6,01 seconds) and the vacuous chewing movements (VCM=104,83±32,97) and acute ω-3 administration decreased the immobility time (39,62±10,45 seconds) but not completely the VCM (84,70±38,42). This is corroborated with an increase in thiobarbituric acid reactive substances in substantia nigra (150,57±61,40 ηmol MDA/g tissue) in the presence of reserpine and their partial reduction with ω-3 supplementation (122,14±22,21 ηmol MDA/g tissue). In the striatum reserpine didn't cause damage (371,62±67,39 ηmol MDA/g tissue), when compared with the control group (363,80±66,71) but when associated with ω-3 presented lower values (215,73±27,07 ηmol MDA/g tissue). We noticed that acute ω-3 demonstrated protective effect on motor disorders and partially in oxidative stress reserpine-induced. Studies with more time ω-3 administrations are necessary to observe better beneficial effects.

Keywords: ω-3, reserpine, oxidative stress, orofacial dyskinesia.

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