allied academies

J Neurol Neurorehabil Res, Volume 4

4th International Conference on

Spine and Spinal Disorders

September 03-04, 2019 | London, UK

Preventing development of glucocorticoid-induced Osteoporosis by cod liver oil

Amr S Elbahnasawy[1,2], E R Valeeva[1], Eman M El-Sayed[2] and **N V Stepanova[1]**

[1]Kazan Federal University, Russia

[2]National Research Centre, Egypt

Osteoporosis is recognized by decreased bone density and deterioration in bone structure, causing a decrease in bone strength and an increase in bone fragility and fracture problems. Glucocorticoids (GCs) are considered as one of the main reasons of the secondary osteoporosis, and the resulting fractures cause significant morbidity. fish oil can decrease bone resorption, inhibit osteoclastogenesis, and prevent bone resorption. The aim of the current work was to evaluate the role of cod liver oil in preventing bone loss and osteoporosis in glucocorticoid-treated rats. The fatty acids profile of cod liver oil was analyzed, male rats were fed balanced diet and subdivided into 3 groups, 1- normal control, 2- prednisolone control, administrated prednisolone (10 mg/kg po daily); 3- fish oil, administrated prednisolone + cod liver oil (7% w/w).

Fatty Acid analyses showed that cod liver oil contained high levels of long chain ω-3 polyunsaturated fatty acids (PUFAs), eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). Supplementation with cod liver oil helped to improve calcium levels in plasma and suppress oxidative stress and inflammatory markers. Additionally, reduced bone resorption as reflected from the decreased levels of C-terminal telopeptide and showed significant improvement in bone mineral density and normal histological results of bone cells compared to normal and prednisolone control. Our study indicated that feeding oil rich in PUFAs such as cod liver oil was able to modulate the potential effect of prednisolone in bon loss in rats. This may occur through some intracellular pathways, involving the improvement of calcium absorption, regulation of bone metabolism and the differentiation of the osteoblast and osteoclast, suppression of oxidative stress and modulation of inflammatory response. Therefore, cod liver oil could be used as a natural approach to help in preventing bone loss associated with glucocorticoid therapy.

e: amelbahnasavi@stud.kpfu.ru

Notes: