ABSTRACT

MECHANISM OF SALTWATER FISH CONSUMPTION BY MOTHER HOUSE MICE (MUS MUSCULUS) ON THE INCREASING TEETH ENAMEL DENSITY OF THEIR PUPS

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Objective: The mechanism of density in amelogenesis of primary teeth of children whose mothers consume saltwater fish hasn’t been clearly explained yet.

Purpose: Explains the density mechanism in the amelogenesis of mice breed from saltwater fish powder (SFP) consuming mothers.

Methods: This was a true experimental research with Completely Randomized Design. 16 Pregnant mice (Mus musculus) were divided into 2 treatment groups using purposive sampling. Treatment group (P) was administered SFP 2.17 mg / 0.5 ml 3 times a day every 6-8 hours, while control group (K) was administered CMC mg / 0.5 ml 3 times a day every 6-8 hours. All mice were sacrificed on day 18 prenatal. All research data were replicated 8 times for treatment group, and 7 times for control group. Saphiro-Wilk tests were used to determine normality distribution, Independent T-tests were done for data distributed normally. In the other hand, data were analysed using Mann-Whitney if they weren’t distributed normally.

Results: This study proved that SFP administration enhanced the density mechanism in dental enamel amelogenesis through the Amelogenin pathway (B = -0.751), Kallikrein-4 (B = 0.786) and enamel density (B = 0.507). This was confirmed by the increment in FABP expression (p<0.05), Kallikrein-4 (p<0.05), alkaline phosphatase (p<0.05) and enamel density (p<0.05), while reduction were found in Amelogenin (p<0.05) and collagen type 1 (p<0.05).

Conclusions: It can be concluded that SFP enhanced tooth enamel density through Amelogenin and kallikrein-4.

Keywords: Enamel Density, Amelogenesis, Saltwater Fish Powder, Prenatal