

Effects of the Food Colour Erythrosine on Thyroid Gland Function in Experimental Rats

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Abstract : Children in the third world consumes many food products colored red like sweets and soft drink without knowing its effect on health or the type of color used in these products Erythrosine (ER,FD & C Red No.3) is one of the most common coloring agent used in these products and in coloring cherry in compotes. The possible adverse effect of erythrosine ER on the thyroid gland function is investigated in albino rats. Forty-five adult male albino rats were divided to three groups two groups will receive ER orally in doses 68 and 136mg/kg respectively. Third group will receive distilled water for three months Sections of thyroid glands were examined for histopathological, morphometric analysis and MIB-I Ki67 (proliferative marker). Serum concentration of triiodothyronine (T3), Thyroxin (T4) and thyrotrophin (TSH) were determined, results showed histological changes in the two treatment groups versus control group in the group with 68mg/kg dose show vaculation of the cytoplasm of follicular cells and pleomorphism of their nuclei. While the other treated group {136mg /kg} showed congestion of blood vessels, hyperplasia of the interstitial cells and increased multilayer of the follicular cells. Highly significant increase in the mean area of the thyroid follicles in both treated groups compared to control group. Erythrosine treated groups showed a very highly significant decrease ($P < 0.001$) in serum concentration of T3 and T 4 while TSH showed a very highly significant increase versus control.

Keywords : erythrosine, thyroid, morphometrics, proliferative marker

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