

Histological changes of rat tongue papillae due to chromium toxicity and the protective role of vitamin E

Abstract

Chromium is an essential trace element whose physiological role is related primarily to the maintenance of normal glucose tolerance, because it serves as a cofactor for the peripheral action of insulin. It is present in the environment in several different forms including chromium (0), chromium (III), and chromium (VI). Hexavalent chromium (Cr VI) is thought to be the most toxic of the released metal ions. This study was done to evaluate such toxic effect on rat lingual papillae and the curative effect of vitamin E on the induced structural changes using light and electron microscopy. The results showed that chromium induced degenerative changes with the lingual papillae especially the filiform, which can be countered by vitamin E supplementation having an antitoxic effect which advocate re-epithelization and regeneration of the connective tissues.