

Aspartame is a common artificial sweetener used today. It has a brand name NutraSweet® and Equal®, is produced by union of amino acids, aspartic acid and phenylalanine. It is widely used in many beverages and food while after metabolites in gastrointestinal tract it causes harmful effect to several organs specially the liver, as the liver considered as the largest organ in the abdomen and its function includes working with the pancreas and intestines to process, absorb food, filtering blood from the digestive tract and detoxification of drugs and alcohol. Ki-67 is a nuclear protein antigen which is related to and may be important for proliferation of cells. The aim of the study was to detect the effect of aspartame on the hepatic tissue of male adult rats by noticing any histopathological change and also to observe the localization of Ki-67 protein after giving aspartame orally. Fifty male albino rats used in this study, they were divided into two groups: Group A 10 rats, were received distilled water and regarded as control. Group B 40 rats, administered 40mg/Kg aspartame powder after dissolving it in 2ml distilled water orally daily for six weeks and regarded as treated group. After completion of the experiment the animals were sacrificed. Pieces of liver were fixed in 10% neutral buffered formalin and embedded in paraffin wax. Sections, which were 4-5 micrometers thick, made then stained with haematoxylin and eosin for histo-pathological examination. Immunohistochemical examination was done by using Ki-67 antibody and the standard streptavidin-biotin immunoperoxidase method. In the treated group, the hepatic plates lost their normal radial arrangement around central veins. The hepatocytes lost their polygonal shape and showed many cytoplasmic vacuoles of variable size; while the localization of Ki-67 was significantly increased in treated group rats. In conclusion receiving aspartame at a dose 40 mg/kg causes histopathological alterations of the hepatic tissues and leads to increase in the proliferation rate.