

ABSTRACT

Citrinin, patulin, and aflatoxin B₁ are sorts of mycotoxins produced by contaminant moulds especially in damage condition on sorts of food and food stuffs. Citrinin is a nephrotoxic mycotoxin; patulin is nephrotoxic and neurotoxic; but aflatoxin B₁ is known as a hepatotoxic mycotoxin. There is an information that patulin is hepatotoxic, but there are no further research about hepatocyte structure damage on hepatic lobular zones and hepatic dysfunction that caused by citrinin, patulin, and aflatoxin B₁.

This research is done on behalf: to prove that citrinin and patulin are hepatotoxic as well as aflatoxin B₁, i.e: to cause hepatocyte structural damage on hepatic lobular zones and also to cause hepatic dysfunction with similar morphological change as well as on aflatoxin B₁.

This research is pure experimental. This experiment used Randomized Completely Block Design. It is using 72 male mice with the age of 3 months, grouped into experimental groups and control groups. Mice belonging in experimental groups is divided into subgroups given : citrinin, patulin, and aflatoxin B₁ orally administered during 4 days. The hepatocytes structural damage examination is done by histopathological and ultra-structural examination. Hepatic dysfunction examined by clinical chemistry tests: SGOT, SGPT, albumin, and globulin tests..

The analyse of research results proves that: 1) there is no real difference in the effect of citrinin, patulin, as well as aflatoxin B₁ administration to the value of the hepatocyte structural damage ($p > 0,01$); 2) a very real difference is shown in the dose effect of the three sorts of mycotoxins to the value of the hepatocyte structural damage ($p = 0,00$); 3) there is a very real difference in the three sorts of mycotoxins with different dosis to the value of the hepatocyte structural damage on hepatic lobular zones ($p = 0,00$); 4) the highest hepatocyte structural damage value is on the perifer zone, decreased on the midzonal zone, and the lowest is on the centrilobular zone; 5) there is no real difference in the effect of the three sorts mycotoxins administration to the value of hepatic dysfunction ($p > 0,05$); 6) a real difference is found in the dose effect of the three sorts of mycotoxins to the value of the hepatic dysfunction ($p < 0,05$).

The conclusion of this research is that citrinin and patulin are also hepatotoxic, as well as aflatoxin B₁, i.e: to cause hepatocyte structural damage on hepatic lobular zones and also to cause hepatic dysfunction with similar morphological change as well as on aflatoxin B₁, consist of: cloudy swelling, hydropic change, fatty change, and necrosis.

It has been proved that citrinin and patulin are hepatotoxic as well as on aflatoxin B₁. So it is important to prevent food and food stuffs from damages in order to hinder from contamination by citrinin, patulin and aflatoxin B₁, which is produced by contaminant moulds.

Key words: hepatotoxicity, citrinin, patulin, aflatoxin B₁, contaminant moulds, hepatocyte structural damage, hepatic dysfunction.