Study the Effects of Aflatoxin B1 on the Structure of Rat Geogenum

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Abstract
Aflatoxins, particularly Aflatoxin B1 and lethal and irreversible effects on human and animal health. In this study 50 adult male mice each weighing 20 grams were grown was tested. Aflatoxin B1 derived from Aspergillus which was purchased from Sigma crystal form was dissolved in corn oil was administered orally for 35 days for each group at doses of 100, 350 and 100 Mg / kg. According to the results of samples treated with different doses of Aflatoxin B1 on the muscle layer of tissue is ineffective and histopathologic studies suggest proliferation and accumulation of inflammatory cells is lymphoplasmacytic.

Keywords: geogenum , Aflatoxins , Histomorphometry , histopathology

Introduction
Aflatoxins are a group of mycotoxins that are produced by certain species of the genera of fungi. So far, 18 cases have been identified Aflatoxin, among types G1, M1 and B1 are of the utmost importance. Aflatoxin, high Aflatoxin B1, B2, G1, G2 B1 is the most common and is highly toxic. Aflatoxin may be present in many foods Cereals , oilseeds , spices , maize , ground nuts ( peanuts) , pistachio , red pepper , black pepper , dried fruit , figs , including materials that are at high risk of Aflatoxin. But this dangerous toxin can be seen in a wider range of foods. In milk, cheese and other dairy products Aflatoxins M luck there. Advanced persistent increases the risk of the toxin. It is of particular importance that the primary source of the poison known as the toxin structure is very robust and stable during industrial processes. Aflatoxin can cause acute poisoning and even death significantly in humans. Although different amounts of Aflatoxins on the liver is the most effective in the lung, kidney, brain and heart patients with acute poisoning observed. Necrosis and acute cirrhosis of the symptoms of acute poisoning by Aflatoxin is bleeding and edema. Chronic poisoning by the toxin is more important, especially in developed countries. Aflatoxin B1 is a possible human carcinogen, especially liver cancer.

Taking a long time traces of the toxin can cause liver cancer, hepatitis, jaundice, cirrhosis and metabolic disorders is a micronutrient. Aflatoxin also Reese and kwashiorkor syndrome (a disorder of malnutrition in children).

Effective amount of the toxin that causes acute or chronic poisoning is not exactly clear. Aflatoxin is a chemical compound that is very stable even at high temperatures did not change much. The toxin resistance against heat to other factors such as moisture content, pH depends, however, cook and warm a reliable way to eliminate this toxin for example, Create Green Coffee at 180°C for 10 minutes to reduce Aflatoxin B1 in only 10% of it. Stability of Aflatoxin M1 in milk fermentation process are evaluated and despite a decrease in the remaining amount of the toxin Aflatoxin in products Cheese and yogurt are significant. In this paper the effects of Aflatoxin B1 on the jejunum of mice.
Materials and Methods
Cement plates slide
His special slides one by one out of the basket and cutting edge with a piece of clean and cutting edge clean with a piece of gauze, a drop of glue put in the corner sections and the plates are mounted on it and the likelihood of bubbles from the plates with partial pressure to make the needle out and put 12 hours at 37°C until the glue is dry. The slides were prepared for microscopic observation.

Data analysis
Statistical analysis software (IBM Co. USA) SPSS and statistical methods One way ANOVA and Tukey post hoc test with P<0.05 compared with the mean and standard deviation was obtained.

Results and discussion
Histomorphometric findings
The results of the villi Statistical analysis showed that the length of the villi in the control group μ 0/017 ± 0/409 is the size of this parameter in the test groups that poison to the 100-350-700 Mg/kg received Respectively μ 0/009 ± 0/307, 0/011 ± 0/368, 0/008 ± 0/323 that the statistical analysis no significant difference between control and test groups at P <0.05 , respectively , the difference between the test groups is as a group that the poison is the dose of 100 Mg/kg had received with 700 Mg/kg relative to each other were not significant but compared to the control group and the group 350 Mg/kg are significantly different from the group that poison with a dose of Mg / kg 350 had received the test and control groups was statistically significant , the villus height and also the sharpest decline in the group 700 Mg/kg.

Results of depth crypts
Statistical analysis showed that the crypt depth in the control group μ 0/011 ± 0/165 is the size of this parameter in test groups that poison to the 100-350-700 Mg / kg received by μ 0/006 ± 0/161, 0/007 ± 0/171, 0/008 ±0 /203 that the statistical analysis of test significant difference between groups at P <0.05 , respectively. The difference between test groups is as a group that the poison is the dose of 100 Mg / kg had received significant differences with other test groups and the control group , but the group that the toxin dose 350 Mg / kg was received. A group that poison is the dose of 700 Mg / kg received did not show significant difference relative to each other and also the largest increase in crypt depth in 100 Mg / kg.

Results the number of goblet cells
Statistical analysis showed that the number of goblet cells in the control group μ 0/2076± 1/44 . This parameter in test groups that poison to the 700-350-100 Mg / kg received by μ 0/89± 1/35, 0/184 ± 2/10, 0/194 ± 1/60 , which is equal to the statistical analysis no significant difference between control and test groups at P <0.05 was observed , The difference between test groups so that the group that the poison is the dose of 100 Mg / kg were received. With 700 Mg / kg but the group did not show significant difference relative to each other at a dose of poison Mg / kg 350 had received. The test and control groups was statistically significant , also the largest increase in the number of goblet cells in the group of Mg / kg 350 we see .

The results of thickness Muscle
Statistical analysis showed that the thickness of muscle in the control group μ 0/0031± 0/0546 is the size of this parameter in the test groups that poison to the 100 -350-700 Mg / kg being received. Respectively μ 0/0022 ±0/0503, 0/0031 ± 0/0581, 0024/0 ± 0/0526 , which is equal to the statistical analysis no significant difference between control and test groups at P <0.05 is observed .
Results epithelium height
In reviewing the statistical analysis epithelium height, thus groups that poison to the Mg / kg 100 - 350-700 received by $\mu$ 0/0008 ± 0/0286, 0/0066 ± 0/0324, 0/0011 ± 0/0389 relative to the control group with the result $\mu$ 0/0013 ± 0/025 significant difference at P<0.05.

<table>
<thead>
<tr>
<th>muscle thickness</th>
<th>number of goblet cell</th>
<th>depth of crypt</th>
<th>length of lint</th>
<th>Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1/60±0/194)a</td>
<td>(0/203±0/008)b</td>
<td>(0/322±0/008)a</td>
<td>100 dozes</td>
<td></td>
</tr>
<tr>
<td>(0/0298±0/0011)a</td>
<td>(0/0586±0/0024)a</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(0/0581±0/0031)a</td>
<td>(2/10±0/184)b</td>
<td>(0/171±0/007)a</td>
<td>350 dozes</td>
<td></td>
</tr>
<tr>
<td>(0/0324±0/0066)a</td>
<td>(0/368±0/011)b</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(0/0503±0/0022)a</td>
<td>(1/35±0/089)a</td>
<td>(0/161±0/006)a</td>
<td>700 dozes</td>
<td></td>
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<td>(0/0286±0/0008)a</td>
<td>(0/307±0/009)a</td>
<td>(0/0011±0/0328)</td>
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</table>

**Histopathological findings**
The results of the study geogenum tissue using stained with hematoxylin – eosin were examined, reflect the following results.
Smear 100 Mg / kg
In this case, the cylindrical epithelial cells of normal, healthy muscle layer, the gland without any changes histopathologic and cellular proliferative changes with accumulation of inflammatory cells in the submucosa lymphoplasmacytic can be seen, it should be noted that the proliferation of the other slides intensity was more visible.
Smear 350 Mg / kg
In the case of cylindrical cells was relatively small and confined to the top of the pile, the pile was observed little change in the number of goblet cells low, muscular layer remains unchanged and the area was relatively unchanged glands, inflammatory cell infiltration a single core was evident in the submucosa.
Smear 700 Mg / kg
In this case, the cylindrical epithelium of the villi cell damage, reduce the length of the villi and an increase in connective cells in the lamina propria and submucosa, often single-core types were observed, the muscular layer showed no damage and endocrine labor-kun histopathologic terms were often remains unchanged.

**Conclusion**
According to the results of histomorphometric studies of different levels of Aflatoxin B1 significant effect on the intestine jejunum epithelium height without pay. As well as the results of histopathological studies showed proliferative cell changes that accumulation of inflammatory cells in the submucosa seen lymphoplasmacytic, Aflatoxin is also significant effect on the thickness of the muscle layer of intestine jejunum, but in different doses of Aflatoxin B1 observer morphometric changes in the number of goblet cells jejunum villus length and crypt depth were. Check Statistical analyzes indicate that the doses used in various stages of testing no matter how much higher the effects of mycotoxins mentioned on the villain more consequently, the dose of Aflatoxin is in direct
relation to the severity of the damage to the villi, citing the fact we are seeing Perez maximum reduction in the dose of 700 Mg/ kg as well.

References