

## **TOXOLOGICAL PATHOLOGY EFFECT OF HENA (LAWSONIA INERMIS) ON RATS ORGAN**

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### **ABSTRACT**

HENA is extracted material from the plant material used women for hair coloring & cosmetic agent to dye the skin according to say of the Messenger of Allah prophet Muhammad was said:-The Islamic plant beautified the woman, headache relief , strong the eye & increase in sexual intercourse.

Abu Al-hassan (peace be upon him) said :-Hena plant in three qualities prestige in war & love to women with increases in take notice of him.

The plant henna is important plants in veterinary medicine as it is, wound healing field a treatment for many diseases , especially when they are resistant to treatment methods known from diseases, eczema, treatment of gingivitis , burns , a lot of viral diseases , wound healing , therapy fields for cases of diarrhea , our study include 10 rats as 2 groups, control group (5 rats & treatment group (5 rats) which give 1 ml of hena solution through the mouth & after 60 days have sacrificed animals & taken the organs to histopathological processes & after study of tissue slides under the light microscope the results of the toxicity of hena as showing adilation in the renal tubule , erosion in mucosa layer of stomach, atrophy in the lymphatic tissue in spermatogenesis & enlargement size of adrenal gland absence of inflammatory cells.

### **INTRODUCTION**

Hena (*Lawsonia inermis*) of the family (Lythraceae), it is Transmission tree , veteran tree , evergreen tree , it is heavy branching , up to three meters in length . The main home of the henna is south west Asia they need to warm environmental (1,2) henna, a natural product obtained from the crushed leaves of Lawsonia , has for centuries been used as a cosmetic agent to dye the skin , hair & nails of people in many middle eastern countries & large amounts of it which it is imported

for this purpose into the United States (David et al).Henna has compounds strong &effective as Lawson –essential oils –dyes acidic-materials Taninah –Zanthon – Derivativeshydroxylated&contain lead ,mercury& nickel .While the leaves of henna contain different materials of Glucosides.Henna benefit in means everything luminous ,happiness &brightly colored( 3) in treating eczema so put henna paste on the affected area 3-5 times daily ,it is used to treat burns as reduce pain & the amount of water lost engaged in the treatment of wart ,it is useful in strengthening the gums & soaked with boiled of henna help teeth tangency as well as to rinse the mouth by root of henna while leaves of henna used to cure skin diseases like furuncles ,acne ,fungal infections leprosy ,henna used as laxative for the nerves & it is choice factors to fractures healing ,chronic wound healing ,defense mechanism to hair inflammation ,tumor ,pimples, treatment uterus diseases, joint diseases ,henna used as antivirus &antibacterial or antiparasiteinfections but some scientific studies were presented on the henna toxic caused allergic,kidney failure&possibly death sometimes it directly affect the immune system in the &broken red blood cells(4).

## **MATERIALS & METHODS**

We took ten white rats from medicine college of Thi-Qar university &placed in the animal adaptation period with giving diet & water with notes activity of animals daily,and then began to experiment by giving 1ml to each rat concentration of 0.5% of a solution of henna through 2 months,after then killing the animals & took all internal organs&placed in 10% then passed upgrading of concentration alcohol ,xylene,embedded in paraffin,cut by microtome 5 $\mu$ m and then staining with hematoxylin& eosin stain&examined by light microscope (5).

## **RESULTS**

Our study was include note clinical signs which is loss of weight ,general weakness &signs of nervous such as increased fear& found after necropsy with histopathology examination the following changes:-erosion of mucosal layer of stomach ,fig.1,increase cellularity in lamina propria figure 2 , increase hyperkeratosis' in non glandular layer of stomach figure 3,there is congested of sinusoid & central vein of liver with minimal fibrosis & mononuclear cells around central vein figure(4,6),there are changes in kidney tissue likehaemorrhage in interstitial tissue with dilated renal

tubules figure (5)&vacculated of renal tubules cells figure (7) ,,as well as note atrophy into spleen white pulp lymphoid tissue (8),the testicular tissue we note under the microscopic there are suppression of spermatogenesis , giant spermatogonia,& no stages or absence of primary,secondary spermatogonia figure(9)the glomerulus with high cellularity of prominentjakesta glomerulus figure(10) as well as formation of multinucleated spermatid giant cells figure (11,12).adrenal gland tissue is enlargement especially fasculata layer figure (13)There arevacculated

In the nervous tissue with swellingof the cells figure(14)& in myocardial cells figure(15) .

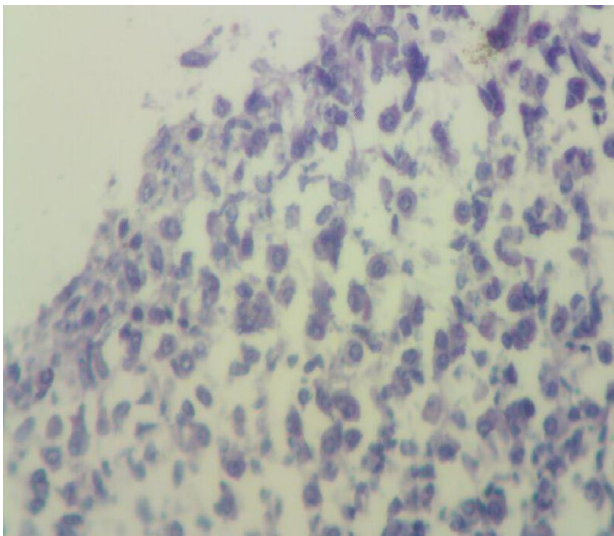


Figure (2) Section of rat stomach show increase cellularity in lamina propria, H&E, 40X

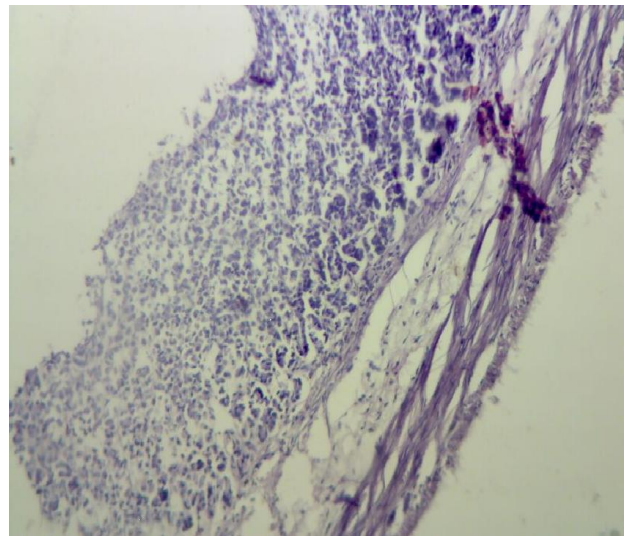
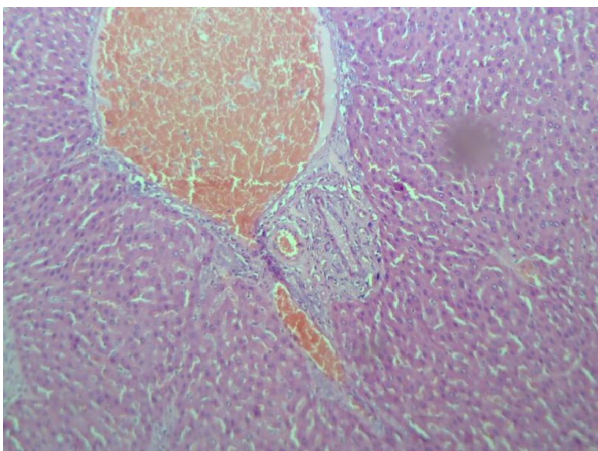
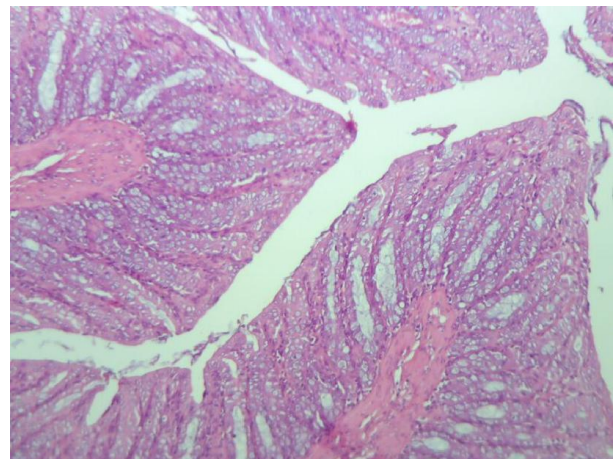


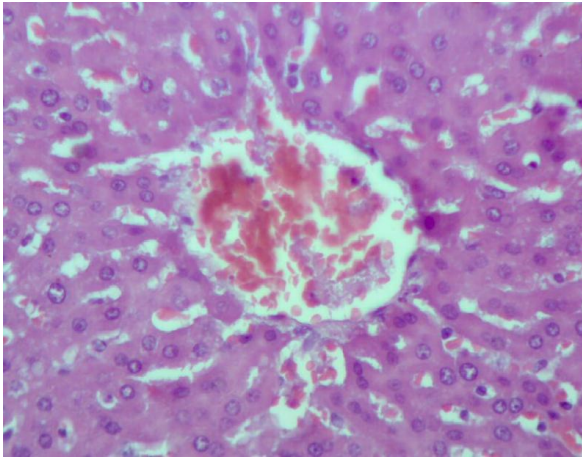
Figure (1) Section of rat stomach show erosion of mucosal layer (H&E, 10X)



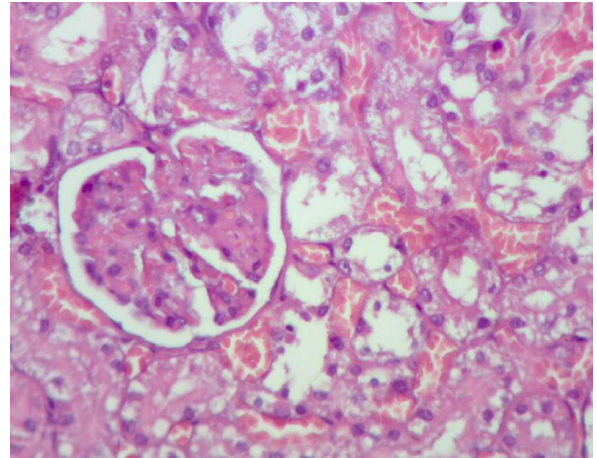
Figure(3) section of rat stomach give 1 ml of hennashowl hyperkeratosis in non glandular layerH&E ,10x



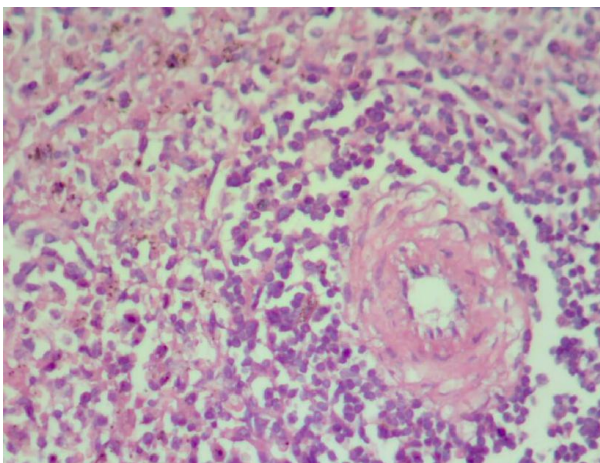
Figure(4) section of rat liver give 1 ml of henna , show minimal fibrosis &mononuclear around central vein H&E 10x



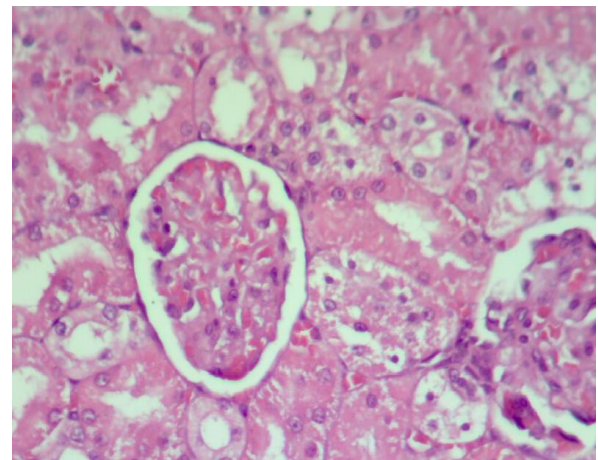
Figure(5) section of rat kidney give 1 ml of henna show haemorrhage in interstitial tissue, dilation of renal tubules with vacuolated of cells. H&E, 10x



Figure(6) section of rat liver give 1 ml of henna, show congestion of central vein & sinusoid H&E 10x



Figure(8) section of rat spleen give 1 ml of henna show atrophy of white pulp with lymphoid follicle. H&E, 10X



Figure(7) section of rat kidney give 1 ml of henna show vacuolated of renal tubules cells, H&E, 10X

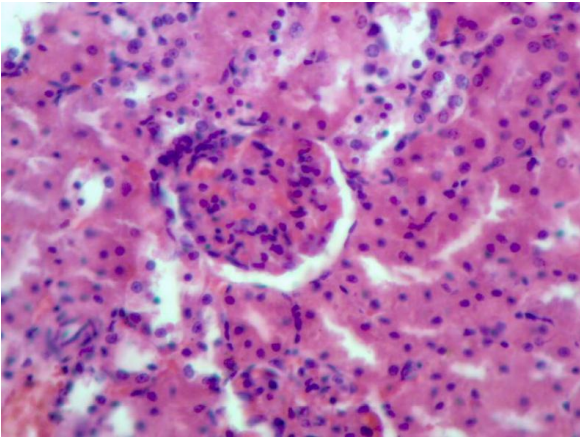


Figure (10): section of rat kidney give 1 ml of henna show glomerulosis with high cellularity and prominent juxtaglomerulosa (H&E,X10).

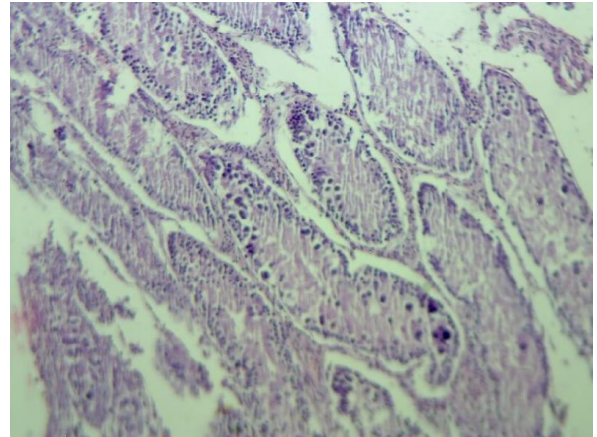
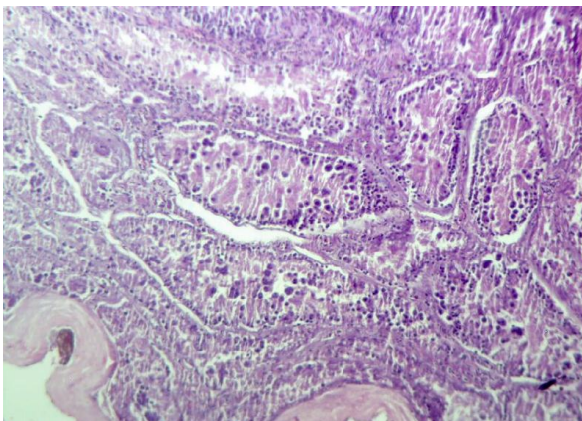
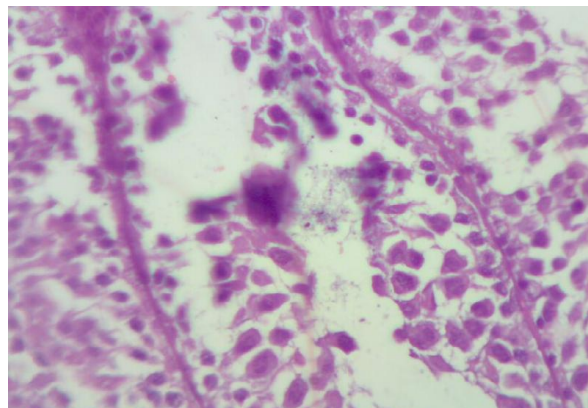


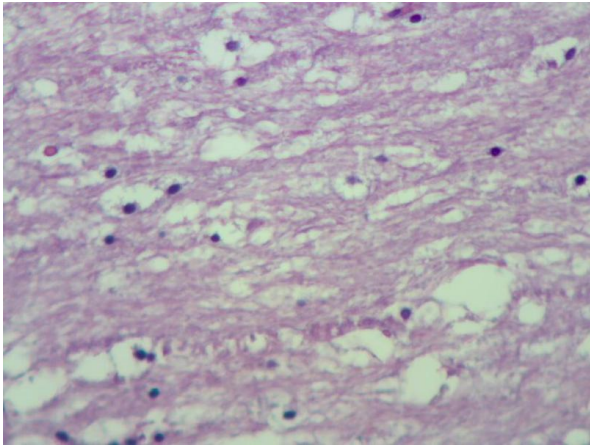
Figure (9): section of rat testes give 1 ml of henna show testicular suppression of spermatogenesis (H&E,X10).



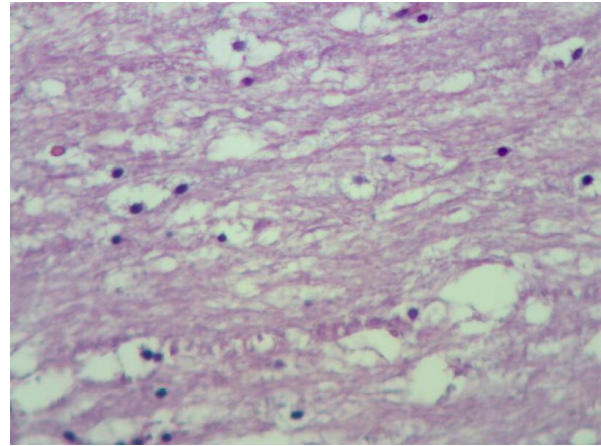
Figure(12) section of rat testes give 1 ml of henna show formation of multinucleated spermated giant cells.(H&E,X10).



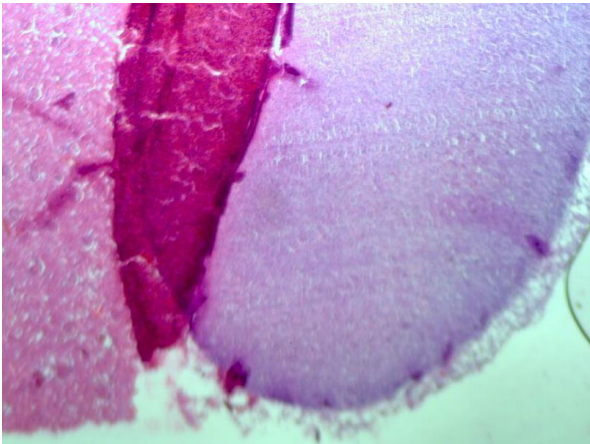
Figure(11) section of rat testes give 1 ml of henna show formation of multinucleated spermated giant cells.(H&E,X40).



Figure(13) section of rat adrenal gland give 1 ml of henna enlargement of adrenal gland .(H&E,X10).



Figure(14) section of rat nerve fiber give 1 ml of henna show vacuolated of nerve cells.(H&E,X10).



Figure(15) section of rat heart muscle give 1 ml of henna vacuolation of myocardial cells.(H&E,X10).

## DISSCUTION

The result of all scientific studies of henna as plant or flowers have many effects on human or animal body positively and negatively as henna have active ingredients such as Al-Lawson a substance responsible for different histological changes were observed in the tissue mentioned in the result of our study because of their biologic medical influence due to theyposses molecules of chemical type 2-hydroxy 1-4 nephtokinin (6), also contain resinousmaterials&mannitol that contain well substances ,all of these materials are very useful & interference in the pharmaceuticals industry & cosmetics ,where the presence of the chemicals that go into building aplant henna that have been mentioned have aclose relationship in the metabolism of cells members as well as their effect on blood .(7),(8),(9), &the henna become toxic according to concentration of (D-P-P) or Barafenelenediamine chemical toxic as it does not exceed 6%,where they cause allergies kidney failure due to degree of toxicity which effect on circulation lead to degeneration and necrosis(10),distributed chemical agent cause lesion by a wide variety of mechanisms ,(11)&possibly death sometimes it directly affect the immune system in the event even to contact with skin as well as affect the dissolution of blood(12) .

### التأثير السمي المرضي للحناء على بعض اعضاء الجرذان

زينب وحيد خضير

فرع الامراض وامراض الدواجن ، كلية الطب البيطري ، جامعة البصرة ، البصرة ، العراق .

### الخلاصة

الحنة او الحناء هو نبات تستخرج منه مادة الحناء التي تستخدمها اغلب النساء لصبغ الشعر ولعمل نقوش جميلة فقد قال رسول الله (صلى الله عليه وعلى آل بيته الأطهار)(خضاب الاسلام يزين المؤمن ويذهب الصداع ويحد البصر ويزيد في الجماع ) وعن ابي الحسن (عليه السلام ) : في الخضاب ثلاثة خصال هيبية في الحروب ومحبة للنساء ويزيد في البهاء .

تعتبر نبتة الحناء من النباتات المهمة في الطب البيطري حيث أنها علاج لكثير من الامراض وخاصة عندما تكون مقاومه العلاج بالطريقة المعروفة منها مرض الاكزيما وعلاج التهاب اللثة والحروق والكثير من الامراض الفيروسية والتنام الجروح كعلاج حقلي لحالات الاسهال

شملت الدراسة اعطاء عدد من الجرذان (امل) من محلول الحناء يومياً عبر الفم ويعد ٦٠ يوم قتلت الحيوانات وأخذت الى التقطيع النسيجي وبعد الفحص تحت المجهر الضوئي حصلنا على نتائج واضحة لسمية الحناء حيث تبين وجود توسع في النبيبات الكلوية وتآكل في الطبقة المخاطية للمعدة وضمور في النسيج اللمفي وتوقف واضمحلال في تكوين النطف وكبر في حجم الغده الكظرية وعدم وجود الخلايا الالتهابية .

## REFERENCES

- 1-[http/ /forum.mn66.com/t328522.html#ixzz2Lwbysxvx](http://forum.mn66.com/t328522.html#ixzz2Lwbysxvx)
- 2-التداوي بالاعشاب والنباتات الطبية للدكتور عز الدين فراج-
- 3-<http://creativecommons.org/licenses/by/3.0>
- 4-Alferah,Mosaid A.Z.2012.Toxicity induced histological changes in selected organs of male(Wister) Rats by Lawsoniainermis leaf extract .European Journal of medicinal plants 2(2):151-158.
- 5.Finkbeiner,W.E.;Ursell,ph.c.&Davis,R.L.(2009).Autopsypathology:Amanual&Alas. 2nd ed:sauders ,an imprint of Elsevier Inc.USA.PP: 100-299.
- 6-[www.sciencedirect.com/... article/pii/0041387990900449](http://www.sciencedirect.com/... article/pii/0041387990900449)
- 7-Selvanayaki,R &Ananthi,T.2012.Hepatoprotective activity of Aqueous extract of lawsaniainermis against paracetamol induced in rats.Asian J. pharm.Res .vol. issue 2,page75-77.
- 8-Bharali manuj kr.; Basumatary,Rajeev; Rahman,Tajbur&Dutta,Karabi. 2012 .Repeated topical application of para-phenylenediamine induces renal histopathological changes in rats.OriginalArticale volume19 issue 2.
- 9-Treadway,S.(1998).An apurvedic herbal approach to a healthy liver .clinical nutrition insights,6(16),1-3.
- 10-Abdelgadir,E.H.;Ahmed,R.H.;Adam,S.L.Y. and Husein,A.M.(2010).Evaluation of toxicological activity(acute& sub-chronic toxicities)of Lawsoniainermis seeds on wister rats .J.pharmacol.toxicol,5(7),324-333.
- 11-Donald McGavin,M.& Zachary, James F.(2007).PATHOLOGIC BASIS of VETERINARY DISEASE . fourth edition,pp1167 .
- 12-Adam,S.E.(1999).Effects of various levels of dietary lipidiumsativum L seeds in rats.J.Clin.Med.27,397-405.