

The effect of aqueous extract of *Artemisia herba alba* leaves on the activity of the liver in White Rats

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Abstract

This study was carried out at the University of Tikrit /School of Education for women/Department of Life Sciences for the period from 20/9/2020 to 20/12/2020, for the purpose of studying the impact of doping on the of water extraction *Artemisia herba* leaves in some vital blood indicators and some hormones in male white rats. This study involved bringing the *Artemisia herba* from the Zagdan Valley of the Anbar Desert, after which it was dried, the leaf blade was pulled, the leaf residue was well milled, and then 50 g of powder was weighed and placed in 1 liter.

The effect of this extract on male egg rats was studied by measuring some of the liver's chemological criteria by measuring ALT, AST and Alkaline phosphatase in the blood. It was divided into three groups, each containing 10 rats, ranging in age from 2-3 months, and at a weight of 150- 200 g, the first group was given 1ml once a day. (a.m.), and the second group was injected twice a day (every 12 hours). The third group was injected three times a day (every 8 hours). In addition to the control group, the standards were measured every 14 days.

The two doses were ethically different and more influential than the three doses and the single dose in the rat totals, followed in terms of the three doses, then the single dose and the values rose the most in control. The results of the experimentation were as follows:

The highest value for AST was in the 31mg/dl doses on the 42nd and 56th day, the highest value for ALT was in the 37mg/dl doses on the 28th day, and the base phosphatase enzyme recorded the highest value in the 68mg/dl doses on the 42nd and 56th day.

Keywords: *Artemisia herba*, ALT, AST, ALP and Liver

1. Introduction

Artemisia is a long-lived wild shrub with large compound leaves and branches, about 40 cm high. The plant has harsh, upright and high roots from below. The first leaf bearing is a spherical oval, two-lobes with two-lobes elliptical lobes, and with simple substrates, the end of which is decorated with 2-4 flowers each [1].

Artemisia contains santonin at the beginning of its growth, the color of its leg is red, while at the beginning of its growth, the substance does not contain the color of the green leg [2] and all kinds of wafers produce strong-smelling aromatic [3].

Plants of the *Artemisia* genus have had many uses in folk medicine since the ages.

Ancient, where these species were used as painkillers, anticonvulsants, anticonvulsants, and blood clotting [4]. The people of some Middle Eastern countries are also used in the herbal plant as anti-diabetic substances [5]. as well as being used as a refresher, stimulant, cardiac muscle booster and menstruator [6], as some species of the plant have shown anti-malarial effectiveness [7], anti-insect [8], fertility stimulant [9], and temperature reduction [10]. It has also been found that the essential oil of the oily extract has a role against viruses, fungi and parasites [11] and the plant has a wide antioxidant effectiveness, increasing the effectiveness of the enzyme Glutathione peroxidase and iron.

Copper, super families and fats play a major role in the treatment of diabetes, where the bean plant is used in

popular medicine to treat diabetes [12].

The liver is the largest organ of the human body. It weighs 14001,600 g in human adults, its shape is like a pyramid lying on its side and its color tends to be red brown, it occupies the right upper quadrant of the abdomen and the liver is divided into two right lobes and a left lobe separated by a [13] sickle ligament Each lobe consists of millions of liver units called platelets and each alone consists of many cells arranged around a small central vein and the natural liver is soft in touch, the liver connects to the bile duct, liver functions depend on many enzymes and the liver is one of the organs attached to the digestive system [14]. It plays a key role in metabolism and sugary proteins as well as fat, and only if the liver is inflated and increased in size due to the disease [15]. The liver has a vital role to play in meeting the metabolism, construction and storage needs of the body. It has an important role in maintaining a vital balance of the body, with the liver being the largest gland in the body and a major organ responsible for the metabolism of carbohydrates, proteins and lipids [16], producing important yellow salts in fat metabolism, as well as in the manufacture of fatty proteins and cholesterol [17, 18]. The liver has an important role in the manufacture and release of a number of blood proteins such as albumin, heparin and fibrinogen.

It also contributes to the process of manufacturing and secretion of growth hormones, as well as activating vitamin D, by eliminating various toxins that cause significant damage to the body, including ammonia and

uric acid [19]. the liver has a major role in the metabolism of cholesterol to contain the majority of low-density lipid protein receptors LDL. In addition, it is the only organ that can present cholesterol in the yellow after it turns into yellow salts. Or it secretes it as a cholesterol into plasma mixed with proteins and the liver absorbs bilirubin and metabolizes it. Iron is stored in the liver or bone marrow for use in the manufacture of new red blood pellets, helping to manufacture blood clotting agents.

2. Methods

40 egg rats were taken and divided into three groups plus the control group each containing 10 rats aged 2-3 months and weighing 150-200 g. The first group was dosed with 1ml. (The effective focus was studied by taking three combinations: (0.50, 0.75 and 1ml) The study showed that 1mL was the most effective and influential combination, and that's why rat aggregates were tested. With this focus) once a day (morning), the second group twice a day (every 12 hours), the third group three times a day (every 8 hours), and the standards measured every 14 days.

Artemisia leaves collected from Anbar Province were collected from the Zagdan Valley area of the Anbar Desert and washed with distilled water. They were then kept in dark-colored bags, discharged from the air and away from the sunshine, and placed in a high place to ensure that the insects did not reach them. After the leaves dried well, the leaf's blade was pulled from the leaves, and then it was grinded with a good ceramic mortar until it became powdered, and then it was filtered with a fine aperture to ensure that it didn't pass unless it was well crushed into the powder's components. It weighed 50 grams of leaf powder, was placed in a glass vault, added 100ml of distilled water, then mixed well. Then the volume to the liter was completed to ensure that the mixture was homogeneous and left for 24 hours in a dark room, after which it was placed in a centrifuge, then filtered with filtration paper to separate the resistive from the filter. Albino males rats, purchased from the Animal House of

the Faculty of Veterinary Medicine of the University of Tikrit, were used in this study after being confirmed to be safe and free of disease by the Animal House Medical Advisory Office of the Veterinary School, and rats ranged in age. 3-2 months, weighing 150-200 grams, then placed in plastic cages with metal sheets for this purpose, and made cages for sterile, mediated accommodation. The cages were sorted with sawdust, the animals were left for two weeks to settle and adapt to their new location while they started working on diet and water for 56 days, and the animals were fed through skin care. (Insurance 25%, maize 45%, soybeans 20%, dried milk 1%, animal protein 10%, plus 50% g of vitamins and preservatives with anti-fungal substances) taking into account the replacement of sawdust two to three times a week to keep animals clean and safe from disease, as well as the daily monitoring of water bottles, ensuring that water does not leak into the cage, and preparing a daily temperature and humidity record schedule, as well as providing temperature between. (23-25) ° C and humidity ranging from 30-10% for the duration of the study, and when the sawdust is altered and the date and time of the dose in the *Artemisia* water extract from the leaf of the chip plant, each animal has been drained by 1 ml of *Artemisia* water extract from the leaf of the chip plant. Oral experimentation by tube reaches the esophagus to ensure that the animal has been swallowed in every amount of dried solution.

3. Results and Discussion

The results listed in table (1) showed changes in the level of AST where the response was evident in terms of the high concentration of AST from the beginning of the trial with the hydrophobic extract of *Artemisia* leaf. The concentration of AST increased from where it was controlled, and this was a moral rise at the $p \leq 0.05$, Experimentation in two doses was more influential and ethically different than one dose and three doses, The single dose was better affected than the three doses, and the highest value for AST was in the 31mg/dl doses on the 42nd and 56th day.

Table (1) Effect of *Artemisia* leaf water extraction on blood concentration of ALP compared to control group (mg/dl)

Average coefficients	Mean± SD 56 day	Mean ± SD 42 day	Mean ± SD 28 day	Mean ± SD 14 day	DayTreatment by <i>Artemisia</i>
27.25 C	282.211±	272.708±	271.370±	271.663±	Control
28.75 B	292.357±	292.331±	291.449±	281.595±	One Dose
30.25 A	312.789±	312.807±	302.582±	292.000±	Two Doses
28.75 B	292.906±	302.685±	281.853±	281.449±	Three Doses

* Vertically similar large letters mean there are no moral differences between them

These results were consistent with [Kechrid et al. \[20\]](#) when different varieties of milk and their relationship to liver effectiveness were used, showing an increase in the AST ratios, and also agreed with [Duarte et al. \[21\]](#) When they used the waterlogs growing in rivers and observed its effect on liver enzymes, these results differed with those of [Jayasri et al. \[22\]](#), by impregnating healthy male rats with olive leaves, observed a moral decrease in the concentration of this enzyme in blood serum due to the reduction or inhibition of free fats and roots by containing

antioxidant substances, but agreed with [Ghazanfar et al. \[23\]](#) when doping rats with hydroxygenic diabetes led to a moral rise in AST concentration compared to the control group due to the effect on the activity of the multi-functional oxidase enzyme in the liver.

The results listed in table 2 showed changes in the level of ALT in the blood. The response was clear in terms of the rise in the level of ALT in the blood since the onset of the hydration of *Artemisia*. The concentration of ALT was higher than that of control, and this was a moral rise at the $p \leq 0.05$, Experimentation in two doses was more

influential and ethically different than one dose and three doses, The three best doses were the single dose, and the

highest value for ALT was in the 37 doses (mg/dl) at the 28th day.

Table (2) Effect of *Artemisia* leaf water extraction on blood concentration of ALP compared to control group (mg/dl)

Average coefficients	Mean \pm SD 56 day	Mean \pm SD 42 day	Mean \pm SD 28 day	Mean \pm SD 14 day	Day Treatment by <i>Artemisia</i>
30.25 C	290.76 \pm	312.998 \pm	301.886 \pm	312.539 \pm	Control
33.25 B	342.234 \pm	332.726 \pm	333.071 \pm	312.644 \pm	One Dose
36.00 A	352.261 \pm	361.826 \pm	371.912 \pm	360.994 \pm	Two Doses
33.75 B	332.309 \pm	332.025 \pm	343.018 \pm	352.108 \pm	Three Doses

* Vertically similar large letters mean there are no moral differences between them

These results were consistent with what I received [24]. When she used the spicy water extract of *Artemisia* and its effect on the concentration of ALT in white rats, I demonstrated the role of the hydrophobic extract of leachate in the conservation of the liver, as it contains sulfur, which has a role in helping the body to eliminate toxins and thereby maintain liver safety by increasing the activity of its enzymes, including ALT, and agreed with what happened Al-Fahdawi [25] who used vasectomy on rats with alloxone-induced diabetes and this substance led to an increase in the concentration of ALT but after blistering, it fell to normal value. The reason for this is that it contains multiple sugars, vitamins and minerals that act

as antioxidants and prevent liver cell necrosis. The effectiveness of ALT may be attributed to the containment of alkaloids that play a significant role in liver protection [4].

The results in table (3) also showed changes in the level of ALP in the blood as the response was evident in terms of high blood levels from the onset of the water extraction of *Artemisia*. The concentration of ALP has risen, and this rise has been morally at the p level of 0.05, Experimentation in two doses was more potent than one dose and three doses with moral differences, The three doses were better affected than the single dose, and the highest base phosphatase enzyme value was in doses 68 (mg/dl) at day 42 and 56.

Table (3) Effect of *Artemisia* leaf water extraction on blood concentration of ALP compared to control group (mg/dl)

Average coefficients	Mean \pm SD 56 day	Mean \pm SD 42 day	Mean \pm SD 28 day	Mean \pm SD 14 day	Day Treatment by <i>Artemisia</i>
59.0 D	\pm 593.25	\pm 601.729	\pm 581.491	\pm 591.700	Control
63.0 C	\pm 642.514	\pm 631.663	\pm 631.912	\pm 622.494	One Dose
67.3 A	\pm 683.20	\pm 681.912	\pm 662.183	\pm 672.108	Two Doses
64.0 B	\pm 633.59	\pm 652.055	\pm 642.025	\pm 642.234	Three Doses

* Vertically similar large letters mean there are no moral differences between them

These results were consistent with what I got [24] when I studied the effect of cows' milk on the base enzyme phosphatase, and what it got [25] When studying the phylogenetic effect of the cortical plant on rats and its effect on the basal phosphatase enzyme, he explained that the elevation of the basal phosphatase enzyme is in the case of non-pathogenic bodies, and also agreed with Ghazanfar et al. [23] It has been shown that the effective parts of the plant contain such potent substances as flavonide, alkaloids, citrol and flying oils, which play a significant role in maintaining liver safety and effectiveness.

4. Conclusion

My study of the effect of *Artemisia* leaf water extraction has shown that it has a positive effect on the liver and enzymes (ALT, AST, ALP) and its survival within normal levels.

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