

The promotive role of shilajit on hematological parameters in local male rabbits

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Abstract— Shilajit is a widely used natural herbo-mineral in traditional medicine all over the world. Dibenzo-alpha-pyrones, fulvic acids and dibenzo-alpha-pyrone-chromoproteins are the active ingredients in Shilajit, which is composed of humus and organic plant matter. It possesses adaptogenic, immunomodulatory, anti-inflammatory, antioxidant and antidyslipidemic qualities. It has parasympathomimetic and cholinergic effects.

The Faculty of Veterinary Medicine was the site of the experiment, University of kerbala from the period 20/12/2024 to 30/1/2025. Where they used special cages for rabbits used in the experiment. We used 20 rabbits local breeds divided into two groups. The aims of this research are to know the effect of Shilajit on red blood cells count, white blood cells count, platelets count, hemoglobin concentration and packed cell volume percentage.

The findings demonstrate that shilajit significantly increase the white blood cell, platelet count, packed cell volume, and hemoglobin concentration in treated group as comparative to control group while there is no significant differences in red blood cells in treated group as comparative to control group.

Keywords — shilajite, complete blood count and local male rabbits

a lot of research being done globally in this area about plant-based medications. The subject of this essay is Shilajit, a naturally occurring mineral substance. Of the 220 mineral and metal substances found in traditional Indian medical systems, Shilajit is a natural mineral that is a gift from nature, according to the pharmacopoeia of traditional Indian medicine (3). Shilajit is frequently used in oriental medicine to slow down the aging process and speed up the rejuvenation process, which are two important characteristics of Indian Ayurvedic and Siddha medicine (4). The mechanisms of Shilajit therapeutic efficacy are limited, and there is little to no data from clinical trials, despite the fact that it is mentioned in ancient traditional literature. Of the many strategies of WHO in promoting safe, effective and affordable TM, in the current millennium, it is crucial to document TM and its remedies and to build a stronger body of evidence regarding the efficacy, safety, and quality of TM practices and products (5). Documentation of TM remedies in the form of a basic data bank and previous literature survey is also necessary for research. Shilajit samples from diverse regions of the Earth have similar physical properties and qualitative chemical composition, but they vary vividly in percentage ratio of components. Physical properties like solubility, pH, etc., is one of the vital and mandatory tools for standardization.

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INTRODUCTION

THE World Health Organization (WHO) states that traditional medicine (TM) includes medical procedures, methods, and knowledge of medicines derived from plants, minerals, and animals that are used either alone or in combination to treat and prevent diseases or preserve health (1). According to WHO estimates, about 80% of people on Earth depend on TM for their medical needs (2). The other two TM components—mineral- and animal-based medications—remain unchanged, but there is

MATERIALS AND METHODS

Twenty rabbits divided into two groups G1 treat with water and pellets this group use as control, G2 treated with Shilajit (0.2 /Kg). Used Billets as animal feed. Tap water used in drinking for each group in all experiment period. All animals were examined to ensure that they were free of injuries and deformities before the experiment started. The animals were dosed prophylactically with an internal, hepatic, and intestinal antihelminthic rug Albendazol 3% and Ivermectin 0.1 ml / rabbit were injected under the skin to prevent internal and external worms. And they were injected with Amprolium at a dose of 0.6 ml / liter of drinking water for 4 days to prevent coccidiosis. At the beginning and end of the experiment,

three milliliters of blood were extracted straight from the heart of each experimental animal. For blood parameters, anticoagulant-containing tubes were utilized.

Complete blood count (CBC)

The measurement was carried out automatically after a blood sample was collected and put into the Urit-2900 apparatus.

Statistical analysis.

The statistical analysis of the experiment's data was measured using the excel program. In experiment one-way ANOVA was utilized to assess significant differences between group means using least significant differences (LSD). The results were shown as mean \pm standard errors, with $P \leq 0.05$ considered statistically significant (6).

RESULTS AND DISCUSSION

The results was collecting as the Effect of Shilajit on hematological parameters in local breed male rabbit. Capital letters are used to denote significant differences between periods for each group (N =20)

Effect of Shilajit on Red blood cells count(cell/ml*10⁶).

Table 1. show There is no significant differences in Red blood cells count between group C and group T.

Mean \pm SE		L.S.D Values
Control	Treated	
5.98 \pm 0.36 A	6.57 \pm 0.35 A	1.15

Effect of Shilajit on white blood cells count(cell/ml*10³).

Table 2. show There is significant increase differences in white blood cells count between group C and group T.

Mean \pm SE		L.S.D Values
Control	Treated	
3.92 \pm 0.52 B	6.63 \pm 0.98 A	2.5

Effect of Shilajit on hemoglobin concentration (g/dl).

Table 3. show There is significant increase in hemoglobin concentration between group C and group T.

Mean \pm SE		L.S.D Values
Control	Treated	
11.84 \pm 0.25 B	13.74 \pm 0.50 A	1.27

Effect of Shilajit on packed cell volume (%).

Table 4. show There is significant increase in packed cell volume in group T compared with control.

SE \pm Mean		L.S.D Values
Control	Treated	
\pm 0.49 39.9 B	43.3 \pm 0.95 A	2.46

Effect of Shilajit on platelet count(10³/uL).

Table (5) show There is significant increase in platelet count on treated group compared with control group.

Mean \pm SE		L.S.D Values
Control	Treated	
364.2 \pm 26.27 B	508.6 \pm 31.66 A	94.86

DISCUSSION

The typical composition of Shilajit 3.3-6.5% steroids, 1.5-2% carbohydrates, 0.05-0.08% alkaloids, 18–20% minerals, 14–20% humidity, 4–4.5% lipids, and 13–17% proteins (including various amino acids) (7). Shilajit samples generally contain 80–85% humic chemicals (such as fulvic, humic, and humin acids) and 15–20% non-humic chemicals, though the organic composition varies by region (8). Trace components comprise around 5% of Shilajit is composition (9). In contrast to the control group, the current study discovered that shilajit improved the growth performance of animal. The results of (10) who discovered that various shilajit dosages enhanced the growth performance of animals, are consistent with this discovery. This benefit is thought to be mainly caused by shilajit is high concentration of minerals and trace elements. As a result, shilajit samples from different sources contain minerals and trace elements like copper, iron, chromium, selenium, and zinc (11). Several biological processes, including fish growth and development, rely on each of these components (12). Additionally, shillajit samples contain a high percentage of minerals (18–20%), proteins (including a variety of amino acids) (13–17%), and lipids (4–45%) (13). These components are essential for feed utilization and growth performance (14) imply that fulvic acid, which is known to enhance nutrient absorption, and other healthy compounds may also be present in shilajit. Shilajit has long been used to treat long-term conditions like anemia due to its iron and mineral content (15). Shilajit appears to have potential for enhancing fish blood parameters based on the information currently available. According to (16), Bioactive substances with anti-inflammatory, antioxidant, and immunomodulatory qualities, such as fulvic acid and humic acid, are found in shilajit. These elements might aid in protecting the blood cells from harm caused by harmful substances and free radicals (17). Because of its iron and mineral content, shilajit has historically been used to treat

conditions like anemia over the long term (18) . Based on the available data, shilajit shows promise in improving fish blood parameters. According to (19), shilajit contains bioactive components like fulvic acid and humic acid that have anti-inflammatory, antioxidant, and immunomodulatory properties. These components may help shield the blood cells from damage brought on by free radicals and other dangerous substances (20).

CONCLUSIONS

Shilajit had enhancement effect on immunity, Shilajit had enhancement blood formation through increased (WBCs ,Hemoglobin, Packed cell volume and platelet) and no significant change in RBCs counts . follow

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