

## Clinical Effect of *Barg-e-Jhao* (*Tamarix articulata* vahl.) in Hepatosplenomegaly-A Case Study

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### Abstract:

Hepatosplenomegaly with or without pyrexia is a common problem for physicians in the world, especially in tropical countries. Many tropical diseases as well as hematological malignancies are responsible for such clinical syndrome. Due to declaration of *Kalaazar* free India, especially rural medical practitioners face problems to manage patients of pyrexia with hepatosplenomegaly. Another cause of this syndrome is malaria. Unani system of medicine is one of the oldest systems of medicine and gives relief to the patient through its holistic approach of treatment. Unani Medical System provides treatment through its herbo-mineral and animal products. The objective of this study was to investigate the clinical effect of *Barg-e-Jhao* in a case of Hepatosplenomegaly. In this study a 52 years married female having hepatosplenomegaly with other associated symptoms was treated with the decoction of *Barg-e-Jhao* (*Tamarix articulata* Vahl.) along with *Arq-e-Mako* and *Arq-e-Kasni* for 60 days orally. Decoction of *Barg-e-Jhao* (*Tamarix articulata* Vahl.) along with *Arq-e-Mako* and *Arq-e-Kasni* effectively showed their effect in hepatosplenomegaly. Treatment reduces the size of liver and spleen and improves hemoglobin. From these results it may be concluded that further studies may be conducted in hepatosplenomegaly cases in future.

**Keywords:** Hepatosplenomegaly, *Arq-e-Mako* *Arq-e-Kasni* *Barg-e-Jhao*, *Tamarix articulata* Vahl.

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## Introduction:

Hepatosplenomegaly is a condition that causes swelling and enlargement of the liver and spleen. Hepatosplenomegaly with and without fever is a common problem in medical practice globally specially in tropical countries.<sup>[1]</sup> Hepatosplenomegaly is commonly seen in children of age between 1 month to 15 years.<sup>[2-4]</sup> The spleen and liver plays a pivotal roles in the human body. The functions of spleen are clearance of abnormal erythrocytes, removal of microorganisms and antigens as well as the synthesis of immunoglobulin G (IgG). The functions of liver are production and excretion of bile, excretion of bilirubin, cholesterol, hormones, and drugs, metabolism of fats, proteins, and carbohydrate<sup>[5-7]</sup>. The common causes of hepatosplenomegaly are infection, such as hepatitis C, syphilis, or sepsis from a significant bacterial infection, chronic liver disease with portal hypertension, cancers, HIV, leukemia, lymphoma, pernicious anemia, thyrotoxicosis, acromegaly, trauma, sickle cell anemia, systemic lupus erythematosus, thalassemia, etc. impacted the spleen and liver.<sup>[6-7]</sup>

According to Hippocrates, spleen becomes palpable when the size of spleen increases by double or triple<sup>[8]</sup> *Izam-e-Tihal* (splenomegaly) has been described by Unani scholars under the heading of *Zof-e-Tihal* (splenic insufficiency).<sup>[9-10]</sup> It may be due to the failure of faculty of absorption of spleen. Normal function of spleen is to receive the blood from stomach and liver and filter old

and matured RBC (black bile).<sup>[9-10]</sup> Due to the weakness of faculty of absorption, the spleen cannot filter blood from black bile resulting to the development of *yarqan aswad* (black jaundice)<sup>[11]</sup>. Unani scholar described that *Kabid* (liver) has four faculties, if any faculty become weak due to any reason e.g. *sue-e-mizaj-e-kabid* or *sue-e-mizaj badan*, any pathology in the related organs of liver e.g. gall balder, spleen, kidney, stomach, etc. and inflammation, stone in liver, the function of the liver are deranged resulting to hepatomegaly.<sup>[12-14]</sup>

Unani scholars also mentioned many drugs which are beneficial in splenomegaly and hepatomegaly. *Rabban Tabri* suggested that the drugs having property of *Mufatteh sudad* (deobstruent) and *Qabiz* (astringent) have been prescribed in case of *Amraz-e-Tihal* (diseases of spleen). *Barg-e-Jhao* (*Tamarix articulata* Vahl.) is one of the drugs mentioned for *Izam-e-Tihal* (splenomegaly). *Barg-e-Jhao* is mentioned as *Jali* (detergent), *Mohallil* (antiinflammatory), *Qabiz* (astringent), *Mujaffif* (desiccant), *Rade* (repellent), and useful in *Warm-e-Sulab tihal* (chronic inflammation of spleen), *Sudda-e-jigar wa Tihal* (obstruction of liver and spleen), *Warm-e-Jigar wa Tihal* (chronic hepatitis and splenitis) in Unani classical literature.<sup>[15-18]</sup>

**Case Report:**

A 52 years married female visited institute GOPD with the complaint of slight dull non radiating abdominal pain, , heaviness in left hypochondrium, loss of appetite, palpitation, weakness, nausea and off and on vomiting in the morning. The vomitus contained food articles taken the previous night. Heaviness increases after intake of food. There was no history of haematemesis, malena, jaundice, tuberculosis, hypertension, or diabetes except fever two months back. She is a non-vegetarian, non-smoker, and non-alcoholic. No history of any addiction e.g. tobacco, betel. Earlier, she was investigated in Jawahar Lal Nehru Medical College, AMU Aligarh for Malaria parasite, Widal, CBC and USG Abdomen. MP and Widal were found negative. The values of CBC are mentioned in table I. The USG abdomen showed hepatosplenomegaly with edematous gall bladder and mild diffuse fatty liver.

Examination of the patient: On clinical examination, she was conscious and well oriented and has average built. Her vitals were normal (BP 110/76 mmHg, Pulse 79/min, Temp 99.1°F and RR 17/min). No pallor, icterus, cyanosis, pedal oedema, or lymphadenopathy were detected. JVP was

normal. Chest examination: bilateral vesicular breath sounds with no accompaniments. CVS and CNS examinations were unremarkable.

Abdominal examination revealed hepatomegaly (12 cm, soft, and non-tender), splenomegaly (14 cm, firm in consistency, smooth surface, and mild tenderness), but no evidence of free fluid in peritoneal cavity. There were no visible/engorged veins, or scars over abdominal wall. At the base line of treatment her hematological and biochemical parameters and ultrasonological report showed in table-1 column third.

She was advised to visit the institute for routine examination every week or in case of any adverse event report immediately to the physician. She visited regularly on the prescribed day. The diet chart also given to her to follow strictly daily 2000 calories per day. After one month of treatment her CBC was done there was a slight improvement in her hemoglobin level, she feels improvement in her condition. After completion of two months all the biochemical, pathological and radiological investigations were done and the report were showed in column at the end of study in table-1.

**Table-1: Hematological and biochemical parameters**

Parameters	Normal values	Baseline	After 2 months
Blood Glucose (Fasting)	70-110 mg/dl	81	91
S. Bilirubin	0.2-1.0 mg/dl	1.04	0.7 ↓
SGOT	5-34 IU/L	38.90	28.9 ↓
SGPT	0-40 IU/L	77.79	38.9 ↓
S Alkaline Phosphatase	42-141 IU/L	113.3	78.9 ↓
Hemoglobin	12.0-15.5 gm/dL	8.3 gm	11.4 ↑
TLC	4,000-11,000/ mL	4380/ cumm	4370
Polymorphs	49-74 %	73%	72
Lymphocytes	26-45 %	19%	24
Eosinophils	0-5%	05%	04
Monocytes	2-12%	03%	00
Basophils	0-2	00%	00
Total RBC	4-11 k/uL	3.6x10 <sup>6</sup>	3.64x10 <sup>6</sup>
Total Platelets count	150-400 K/uL	180x10 <sup>3</sup>	1.90x10 <sup>3</sup>
ESR	0-29 mm/hr	41 mm/1 <sup>st</sup> H	30 ↓
Blood Urea	13-45 mg/dl	18.0	22.2
S. Creatinine	0.7-1.4 mg/dl	0.76	0.67
S. Uric Acid	2-7.2 mg/dl	5.03	4.9
Serum Cholesterol	110-250 mg/dl	240.7	129 ↓
Serum Triglycerides	25-160 mg/dl	114.7	77.7 ↓
HDL Cholesterol	35-80 mg/dl	47.83	48.51
LDL Cholesterol	80-150 mg/dl	163.0	125.2 ↓
VLDL Cholesterol	15-45 mg/dl	52.13	32.93 ↓
TSH	0.44-3.45 mIU/ml	4.26	3.92
USG Abdomen		Fatty liver with hepatosplenomegaly with gall bladder wall edematous.	Moderate diffuse fatty liver, liver and spleen are in normal homogenous echo texture of liver.

**Treatment Given:**

**Test drug:** *Berg-e-Jhao* (*Tamarix articulata* Vahl.) was collected from the bank of holy Ganga River in Anoopshahar, District Bulandshahar, Uttar Pradesh with the help of local farmers in the early month of December 2018. The authenticity of the drug was established by the matching with authentic specimen available in Dept. of Botany, Faculty of Sciences Aligarh Muslim University, Aligarh. The leaves of *Berg-e-Jhao* (*Tamarix articulata* Vahl.) was dried

in shade and converted into fine powder by grinding and sieved with 90 no.

**Dose, route and duration of drug administration:** Decoction prepared from 7 gm powder of *Berg-e-Jhao* (*Tamarix articulata* Vahl.) with 100 ml of water was given by mixing 30 ml each of *Arq-e-Mako* and *Arq-e-Kasni* (distillate of *Solanum nigrum* L. and *Chichorium intybus* L.<sup>[19]</sup> empty stomach twice a day for 60 days of market products.

**Results and Discussion:**

She strictly followed the instruction of physician, visited OPD regularly, took medicine on time for two months and avoided all oily and fried food. The laboratory investigation was carried out at the end of two months. On every visit her blood pressure and temperature, pulse were recorded and found within normal limit during the whole period of treatment.

On routine examination after third week of treatment she feels better in her complaints especially weakness, heaviness in abdomen in left hypochondrium, nausea and improvement in appetite. But still she feels palpitation off & on. After completion of two months of treatment she had no heaviness in abdomen, nausea, She was passing stool without any difficulty, without any adverse smell or colour. Her hemoglobin improved and S. Bilirubin, SGOT, SGPT, ALP, S. Cholesterol, Triglycerides, LDL were reduced & become normal in comparison to baseline (Table-1).

*Arq-e-Mako* and *Arq-e-Kasni* (Distillate of *Solanum nigrum* L. and *Chichorium intybus* L.) have *mohallil-e-awram* (anti-inflammatory), *muqawwi-e-kabid* (liver tonic), *musakkin* (neutralizing the heat of humours) action and beneficial in *warm-e-ahsha* (inflammation of viscera), *warm-e-kabid* (hepatitis), *zof-e-kabid* (hepatic insufficiency), *yarqan* (jaundice), *atash-e-mufrit* (excess thirst)<sup>[19]</sup>. At the end of the protocol it can be seen that both arqiyat (*Solanum nigrum* L. and *Chichorium intybus* L.) showed their effect as mentioned in the Unani literature. This is a best evidence to prove the claims of Unani scholars. As discussed earlier *Berg-e-Jhao* have many properties and useful in splenomegaly, e.g. *Jali* (detergent), *Mohallil* (antiinflammatory), *Qabiz* (astringent), *Mujaffif* (Desiccant), *Rade* (Repellent), and useful in *Warm-e-Sulab tihal* (chronic inflammation of spleen), *Sudda-e-jigar wa Tihal* (obstruction of liver and spleen),

*Warm-e-Jigar wa Tihal* (chronic hepatitis and splenitis) in Unani classical literature.<sup>[15-18]</sup> In this study reduction in sign and symptoms and improvement in hemoglobin level, reduction in SGOT, SGPT, ALP, S. cholesterol, Triglycerides, LDL, VLDL parameters proved the claims of Unani scholars. USG also revealed that *Barg-e-Jhao* also reduced the size and echotexture of cell of spleen and liver cell to normal by acting as antiinflammatory action due to the presence of polyphenols, flavonoids, tannins, cyanidins, mucilage, sesquiterpenes, terpenoids and carbohydrates. In other scientific studies the claim of Unani scholars were also proved e.g. as hypolipidemic, antihyperlipidemic, antioxidant, antiproliferative anti-cancer activities in different experimental models.<sup>[20-24]</sup>

### **Conclusion:**

The above observations indicated that *Barg-e-Jhao* (*Tamarix articulata* vahl.) and *Arqiyat* (distillate) effectively reduces the size of spleen and liver as mentioned in the Unani classical literature. These results are encouraging and on this basis further studies may be carried out in different age group of patients having hepatosplenomegaly/hepatomegaly, splenomegaly etc. Unani scholars had mentioned many more drugs in their treatises to alleviate such kind of symptoms. Scientist may take up this job and designed full proof scientific studies to prove the claims of physicians for the cause of humanity in future.

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