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Clinical Efficacy of Unani Regimen in Chronic Hepatitis B: A Case Report

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ABSTRACT:

Hepatitis B virus (HBV) infection is a major global health concern, leading to chronic liver disease, cirrhosis, and hepatocellular carcinoma. While conventional antiviral therapies (e.g., nucleoside analogues) are effective, they are often associated with long-term side effects, drug resistance, and high costs. The Unani system of medicine has a centuries-old legacy of managing hepatic disorders through a sophisticated framework of humoral physiology and hepatoprotective pharmacotherapy. It offers multiple herbal medicines that possess potential hepatoprotective and anti-inflammatory properties, making them alternatives for treating liver disorders. This report details the case of a 45-year-old female patient presenting with constitutional and gastrointestinal symptoms, who was diagnosed with HBV infection six month ago. She was treated with a standardized Unani polyherbal formulation for nine months. Clinically, the patient demonstrated significant symptomatic remission, and virologically, she achieved an undetectable HBV DNA viral load (Target Not Detected – TND) post-treatment. This case suggests the potential efficacy of Unani medicine in achieving clinical recovery in HBV infection, warranting further controlled pharmacological and clinical trials.

KEYWORDS: Hepatitis B, Herbal Medicine, Unani medicine, *Waram al-Kabid.*

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INTRODUCTION:

About 296 million individuals worldwide suffer from chronic hepatitis B virus (HBV) infection, which is the primary cause of cirrhosis and liver cancer. [1] With an incubation period spanning from 28 to 180 days, most infections have an incubation period between 60 and 110 days. The likelihood of transmission increase because patients typically do not show any symptoms throughout the incubation period and are unaware that they have been exposed to HBV. [2] The risk and progression of chronic infections vary with age and are more prevalent in immunocompromised individuals. It is often known that getting older increases a person's risk of developing CHB. [3] Universal infant immunization, which includes timely administration of the birth dose and a complete series of vaccines, remains the cornerstone of prevention, particularly in high-endemic areas where vertical transmission is frequent.[4] By lowering mortality from liver cancer, liver transplants, delaying or stopping the progression of liver disease, and infectivity, the treatment's primary goal is to preserve lives.[3] The entity "*Warm-e-Jigar*" or "*Waram al-Kabid*" in Unani literature resembles the group of symptoms linked to chronic hepatitis B. Chronic hepatitis B can be effectively treated using a variety of Unani medicine compositions, including mono and polyherbal. Scientific studies have demonstrated that the bioactive constituents of these plant-based medicines exhibit antiviral, anti-inflammatory, and hepatoprotective properties. [5]

CASE REPORT:

This is a case of a 45-year-old female patient who came to the Tahaffuzi wa Samaji Tib OPD of Majeedia Unani Hospital, Jamia Hamdard. She was a known case of hepatitis B. Her serum HBsAg report was positive. She complained of malaise, fatigue, nausea, flatulence, bloating, and anorexia for four months. On examination, her vital signs were stable; she was lethargic, and no other significant signs, including icterus and edema, were observed . She had type 2 diabetes mellitus (T2DM) and was taking the oral drug metformin 500 mg once daily. She was not on any antiviral treatment. Besides that, she had no other significant past medical history or family history. She was further advised to undergo a HBV DNA Quantitative (RT-PCR) test.

Investigations

The patient had the following investigations at the initial visits (Baseline investigation),

1. Serum HBsAg showing a positive result
2. HBV DNA, Quantitative (RT-PCR) showing a value of 234 IU/ML

Diet and Lifestyle

A light, easily digestible meal like half-boiled egg yolk, vegetables such as bottle gourd, pumpkin and spinach were advised. [6] Preparation such as porridge, khichdi and vegetable broth was promoted too. Processed foods like packaged snacks, reconstituted meats, frozen meals and foods with sugar content like sugary drinks and

sweetened breakfast cereal were discouraged. The patient was advised moderate exercise *(Riyazat Motadil)*.

THERAPEUTIC INTERVENTION:

To reduce the viral load and support liver health, the compound Unani formulations as *Arq Mako* (60 ml), *Arq Baranjasif* (60 ml), *Qurs Asfar* (2 tablets), *Arq Kasni* (60 ml), *Jigrol Tablet* (2 tablets) (Table 1) were prescribed orally to the patient for 9 months. In total, 4 follow-ups were done.

Arq Mako has been reported to possess hepatoprotective and anti-inflammatory effects on the liver. [7] *Arq Baranjasif* has been also reported to have hepatoprotective and anti-inflammatory properties. [8] *Qurs Asfar* contains ingredients that have been described in Unani texts as having blood-purifying properties. [9] *Arq Kasni* has been reported to possess hepatoprotective and antiviral properties. [11][12] *Jigrol* tablet is a liver tonic & hepatoprotective drug. [13]

RESULTS:

The patient was observed closely during the treatment course at each visit to the hospital. The observations done are as mentioned below.

1. Initial Phase (Month 1): Early symptomatic response, like improvement in nausea and appetite, were seen.
2. Intermediate Phase (Month 3): The Overall GIT discomfort of the patient began to subside; no new complaints were received.
3. Intermediate Phase (Month 6): The debilitating fatigue that had previously impacted the patient's daily activities showed considerable abatement. Furthermore, all remaining gastrointestinal complaints—such as abdominal discomfort, bloating, flatulence, and nausea—resolved. This resolution of systemic and digestive symptoms suggested a significant reduction in hepatic inflammation and an overall improvement in the patient's metabolic and functional status.
4. Final Evaluation (Month 9): Virological Cure and Complete Remission
   HBV DNA Quantitative (RT-PCR) test result shows TND “target not detected,” indicating an undetectable virus in the body (Table 2).

The reports of the HbsAg & HBV DNA Quantitative (RT-PCR) tests are shown in Figure 1, Figure 2 and Figure 3, depicting positive HbsAg test and the status of the viral load, pre- and post-treatment.

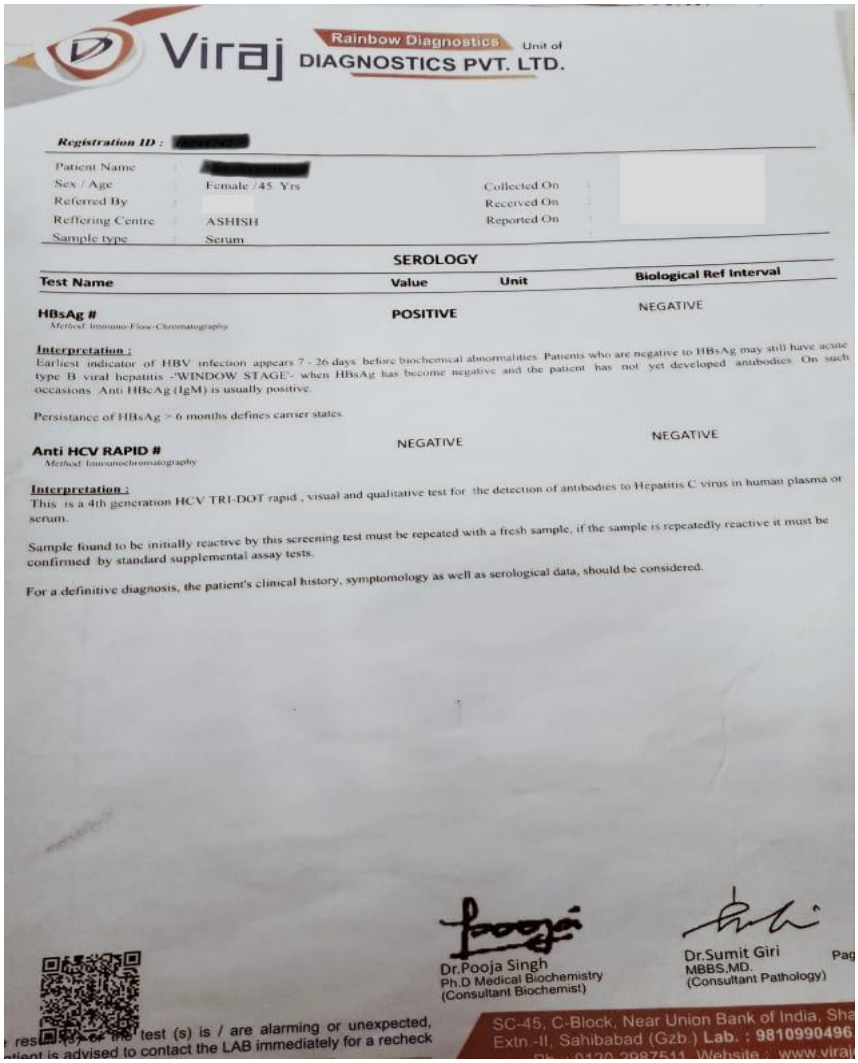
Table-1: Unani drugs, Dosages, frequency of intake & properties

Drug	Dose	Frequency	pharmacological Properties
Arq Mako	60 ml	Twice a day	Anti-inflammatory, Hepatoprotective, [7] Expectorant, Antioxidant. [10]
Arq Baranjasif	60 ml	Twice a day	Anti-inflammatory, Antioxidant and Hepatoprotective. [8]
Qurs Asfar	2 tablets	Twice a day	Blood purifier. [9]

Arq Kasni	60 ml	Twice a day	Hepatoprotective, Antimicrobial Antioxidant [11] and Antiviral. [12]
Jigrol tablet	2 tablets	Twice a day	Liver tonic and Hepatoprotective. [13]

Table -2: Diagnostic test results at baseline and at 9 months

Diagnostic test	Baseline	At 9 months
Serum HbsAg	Positive Result	-
HBV DNA Quantitative (RT-PCR)	234 IU/mL	TND (Target not detected)


Viraj Rainbow Diagnostics Unit of DIAGNOSTICS PVT. LTD.

Registration ID : [redacted]

Patient Name : [redacted]
Sex / Age : Female / 45 Yrs
Referred By :
Reffering Centre : ASHISH
Sample type : Serum
Collected On :
Received On :
Reported On :

SEROLOGY

Test Name	Value	Unit	Biological Ref Interval
HBsAg # Method: Immuno-Flow-Chromatography	POSITIVE		NEGATIVE

Interpretation :
Earliest indicator of HBV infection appears 7 - 26 days before biochemical abnormalities. Patients who are negative to HBsAg may still have acute type B viral hepatitis -'WINDOW STAGE'- when HBsAg has become negative and the patient has not yet developed antibodies. On such occasions Anti HBcAg (IgM) is usually positive.

Persistance of HBsAg > 6 months defines carrier states.

Anti HCV RAPID # Method: Immunochromatography	NEGATIVE		NEGATIVE

Interpretation :
This is a 4th generation HCV TRI-DOT rapid , visual and qualitative test for the detection of antibodies to Hepatitis C virus in human plasma or serum.

Sample found to be initially reactive by this screening test must be repeated with a fresh sample, if the sample is repeatedly reactive it must be confirmed by standard supplemental assay tests.

For a definitive diagnosis, the patient's clinical history, symptomology as well as serological data, should be considered.

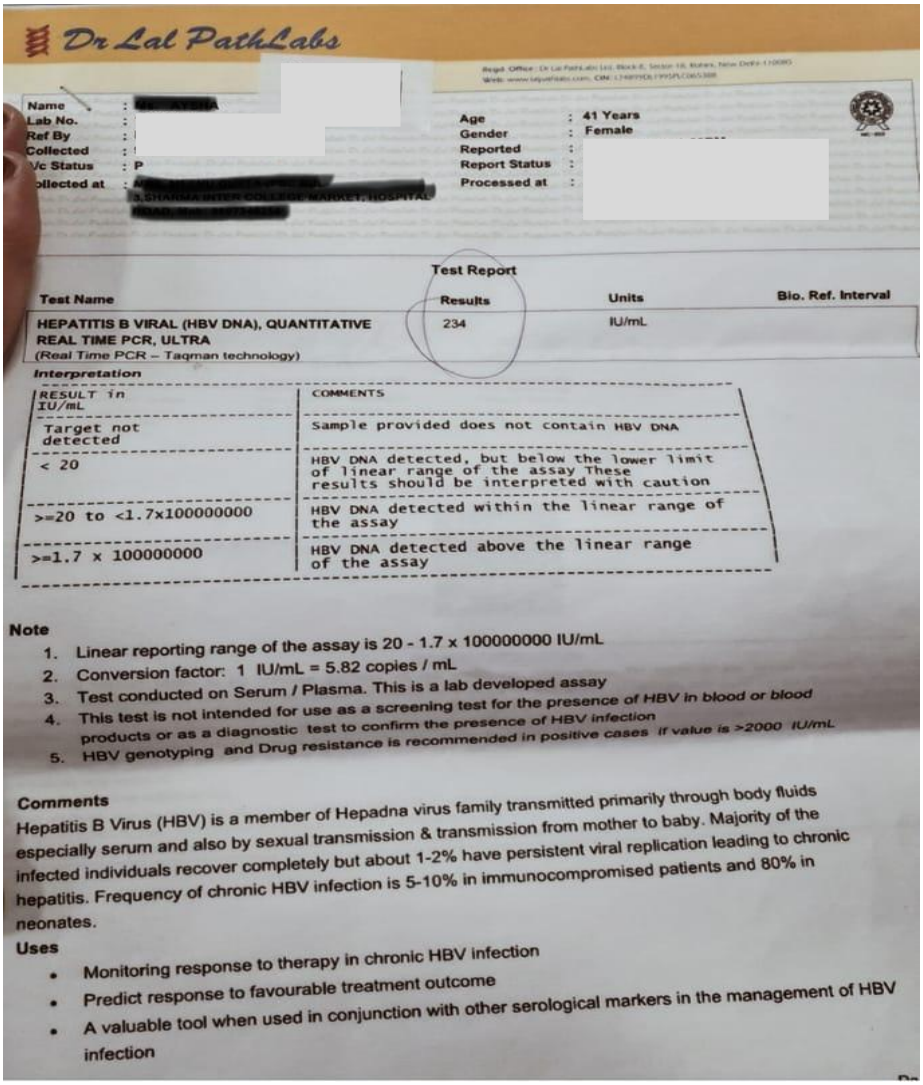
Dr.Pooja Singh
Ph.D Medical Biochemistry
(Consultant Biochemist)

Dr.Sumit Giri
MBBS,MD.
(Consultant Pathology)

test (s) is / are alarming or unexpected, patient is advised to contact the LAB immediately for a recheck

SC-45, C-Block, Near Union Bank of India, Sha
Extn.-II, Sahibabad (Gzb.) Lab. : 9810990496

Figure 1. Serum HBsAg test report



Dr Lal PathLabs

Name : [redacted]
Lab No. :
Ref By :
Collected :
Vc Status : P
Collected at : [redacted]

Age : 41 Years
Gender : Female
Reported :
Report Status :
Processed at :

Test Report

Test Name	Results	Units	Bio. Ref. Interval
HEPATITIS B VIRAL (HBV DNA), QUANTITATIVE REAL TIME PCR, ULTRA (Real Time PCR – Taqman technology)	234	IU/mL	

Interpretation

RESULT in IU/mL	COMMENTS
Target not detected	Sample provided does not contain HBV DNA
< 20	HBV DNA detected, but below the lower limit of linear range of the assay These results should be interpreted with caution
>=20 to <1.7x100000000	HBV DNA detected within the linear range of the assay
>=1.7 x 100000000	HBV DNA detected above the linear range of the assay

Note

1. Linear reporting range of the assay is 20 - 1.7 x 100000000 IU/mL
2. Conversion factor: 1 IU/mL = 5.82 copies / mL
3. Test conducted on Serum / Plasma. This is a lab developed assay
4. This test is not intended for use as a screening test for the presence of HBV in blood or blood products or as a diagnostic test to confirm the presence of HBV infection
5. HBV genotyping and Drug resistance is recommended in positive cases if value is >2000 IU/mL

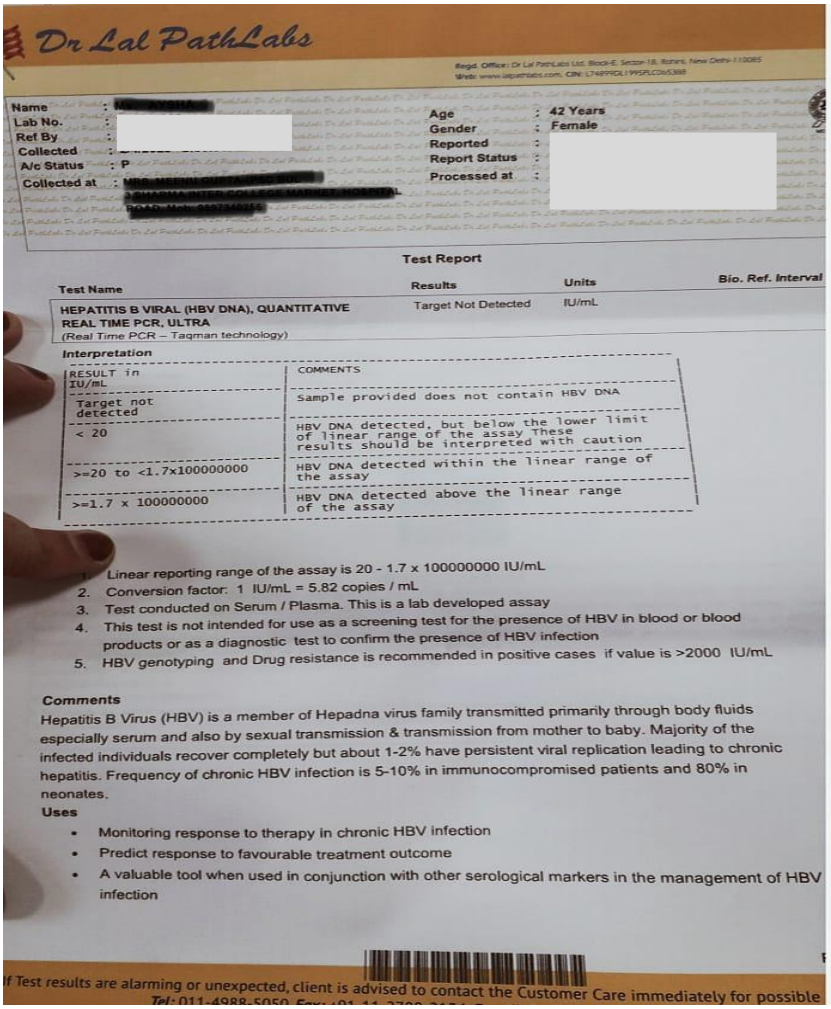
Comments

Hepatitis B Virus (HBV) is a member of Hepadna virus family transmitted primarily through body fluids especially serum and also by sexual transmission & transmission from mother to baby. Majority of the infected individuals recover completely but about 1-2% have persistent viral replication leading to chronic hepatitis. Frequency of chronic HBV infection is 5-10% in immunocompromised patients and 80% in neonates.

Uses

- Monitoring response to therapy in chronic HBV infection
- Predict response to favourable treatment outcome
- A valuable tool when used in conjunction with other serological markers in the management of HBV infection

Figure 2. HBV DNA Quantitative test report pre-treatment



Dr Lal PathLabs

Name : [redacted]
Lab No. :
Ref By :
Collected :
A/c Status : P
Collected at :

Age : 42 Years
Gender : Female
Reported :
Report Status :
Processed at :

Test Report

Test Name	Results	Units	Bio. Ref. Interval
HEPATITIS B VIRAL (HBV DNA), QUANTITATIVE REAL TIME PCR, ULTRA (Real Time PCR – Taqman technology)	Target Not Detected	IU/mL	

Interpretation

RESULT in IU/mL	COMMENTS
Target not detected	Sample provided does not contain HBV DNA
< 20	HBV DNA detected, but below the lower limit of linear range of the assay These results should be interpreted with caution
>=20 to <1.7x100000000	HBV DNA detected within the linear range of the assay
>=1.7 x 100000000	HBV DNA detected above the linear range of the assay

1. Linear reporting range of the assay is 20 - 1.7 x 100000000 IU/mL
2. Conversion factor: 1 IU/mL = 5.82 copies / mL
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Comments

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Uses

- Monitoring response to therapy in chronic HBV infection
- Predict response to favourable treatment outcome
- A valuable tool when used in conjunction with other serological markers in the management of HBV infection

If Test results are alarming or unexpected, client is advised to contact the Customer Care immediately for possible

Figure 3. HBV DNA Quantitative test report post-treatment

DISCUSSION:

From an Unani perspective, the patient's condition correlates with *Waram al-Kabid* (hepatic inflammation) caused by *Khilt-i-Safra'* (yellow bile) imbalance. The prescribed drugs acted as hepatoprotective, anti-inflammatory, antioxidant, and blood-purifying agents, gradually restoring liver function. As early detection and the start of antiviral therapy are essential for managing Hepatitis B in order to prevent disastrous consequences.[14] The result reflecting HBV clearance, from a 234 IU/mL viral load to achieving undetectable viral load (TND) within nine months of Unani treatment, is noticeable (Table 2).

In this patient, antiviral, anti-inflammatory, and hepatoprotective Unani formulations were used to cease the progress of the disease. The treatment was planned to continue until the viral load became undetectable (TND). And that was achieved after 9 months of treatment. During the duration of treatment 4 follow up were done at 1st month, 3rd month, 6th month, and 9th month. The patient's condition was seen to improve significantly with each follow-up. No side effect of the formulations was reported by the patient.

The various Unani formulations that were used to treat patient are-

***Arq Mako*:** It has *Muqawwi-i-Jigar* (hepatotonic) & *Muhallil-i-Awram* (anti-inflammatory) actions as mentioned in Unani texts. And it is beneficial in Jaundice (*Nafa'e Yarqaan*).[15]

"*Arq-Mako* obtained from distillation of *Solanum nigrum* belonging to the family Solanaceae is used as a hepatoprotective, anti inflammatory, antimicrobial, antioxidantnt, gastro-protective, hypocholestrolemic, antihyperglycemic and diuretic. It has a remarkable free radical scavenging activity and is effective in hepatic disorders. It is reported to be very effective in fatty liver disease and hepatosplenomegaly".[16]

***Arq Kasni*:** It acts as a stomachic and deobstruent and is beneficial in visceral inflammation. In classical Unani text *Kasni* has been mentioned to be useful in *Waram al-Kabid* (hepatitis), *Waram al-Mi'da* (gastritis) , *Izam al-Tihal* (splenomegaly).[17]

"*Arq-Kasni* obtained from distillation of *Cichorium intybus* and is used as an antioxidant, anti-inflammatory, hepatoprotective, stomac hic and antihyperglycemic. It is found to be very effective in hepatosplenomegaly and decreases the level of serum cholesterol. It is reported for its effectiveness in fatty liver disease, hepatitis, chronic inflammation of spleen and obstruction of liver and spleen".[17]

***Arq Baranjasif*:** *Arq Baranjasif* is a compound formulation which possesses *Muhallil-e-Awram* (anti-inflammatory) property. Its ingredients possess anti-microbial, anti-inflammatory, anti-oxidant, analgesic and hepatoprotective activities due to the presence of alkaloids, tannins, flavonoids, monoterpenes, camphor, saponins, anthraquinone and terpenoids. [8] Because it contains flavonoids, the extract of *Achillea millefolium (Baranjasif)* has been demonstrated in in-vivo experiments to reduce liver enzymes and hepatic cell regeneration. Additionally, when compared to animals in the toxin group, the extract was found to improve liver architecture and the absence of parenchymal congestion.[18]

***Qurs Asfar*:** According to the manufacturer's product label (Hamdard Laboratories India), the *Qurs* constituents have ingredients- *Gandhak* (Sulphur), *Soda Khurdani* (Sodium bicarbonate), *Ararot* (*Maranta arundinacea L*), *Sang Jarahat* saeeda (Magnesium silicate), *Magnesia Fahmi* (Magnesium carbonate) & *Shamaeen* (Liquid paraffin).

Gandhak is used as a *Muḥallil-i-Awram* (anti-inflammatory) *Muṣaffi-i-Dam* (blood purifier), *Qatil-i-Jaraseem* (germicidal), *Dāfi'-i-Taffun* (antiseptic) and *Jali* (detergent) drug.[9] And It has beneficial effects in *Yarqaan* and *Amrad-i- Tihal*.[19]

Soda Khurdani is used as a potent anti-pruritic drug. *Ararot* is used for *Muṣaffi-i-Dam* property.[9] In many in vitro studies it has also shown antioxidative, anti-inflammatory and immunomodulatory properties.[20] Whereas *Sang Jarahat* is a potent *hābis ud-dam* agent. [9]

The primary action of Qurs Asfar is blood purification (*Muṣaffi-i-Dam)*.

Musaffi-i-Dam medications remove toxins through perspiration, urine, and feces; maintain blood viscosity due to their dry temperament and moderate heat; neutralize excess heat and restore normal composition by toning the liver and kidneys.

The kidney, liver, and lymphatic system are normally in charge of eliminating undesirable materials from the body. The blood coming from the gut is screened by hepatic macrophages (Kupffer cells) which identify potentially dangerous compounds and either remove them or change them into forms that are tolerated. Blood purifier medications are needed when waste products are excessive or these organs' functions are compromised. These medications restore normal blood quality and quantity, enhance the important organs, and strengthen the defense system. [9]

***Jigrol tablet*:** is a proprietary Unani medicine of hamdard laboratories India. Tablet Jigrol constituents are, Tukhm-*e-Kasni (Cichorium intybus Linn.), Berg-e-Jhao (Tamarix gallica Linn.), Majeeth (Rubia cordifolia Linn.), Revand Chini (Rheum emodi Wall. ex Meisn.), Berg-e-Kasaundi (Cassia occidentalis Linn.), Berg-e-Sanbhalu (Vitex negundo Linn.), Bao Khamba (Careya arborea Roxb.), Berg-e-Bartang (Plantago major Linn.), Gul-e-Surkh (Rosa damascena Mill.), Kateli (Solanum xanthocarpum Schrad.), Mako Khushk (Solanum nigrum Linn.), Badyan (Foeniculum vulgare Mill.), Tukhm-e-Kasoos (Cuscuta reflexa Roxb.), Biskhapra (Boerhavia repens Linn.), Chob Zard (Curcuma longa Linn.), and Filfil Siyah (Piper nigrum Linn.).*

Hepatoprotective (*Muḥāfiẓ-i-Jigar*) properties of Jigrol tablet help in safeguard the liver against toxic effects associated with bacterial and viral infections, as well as drug-induced hepatic injury. It also contains laxative, digestive, diuretic, and anti-inflammatory qualities. By increasing bile output, it improves digestion and appetite. It works well against jaundice and viral hepatitis. And returns liver functions to normal. [13]

The dietary strategy was basically hepatoprotective and aimed at diminishing the metabolic load on the diseased liver. Soft low-residue food (porridge, vegetable broth, fibrous vegetables such as gourd, pumpkin and spinach) were stressed in an effort to ensure sufficient micronutrient (vitamins A, C and iron) delivery while minimizing postprandial endotoxemia. A strict prohibition of industrially processed items (packaged snacks, reconstituted meats, frozen meals, and refined sugars) was essential to avoid exogenous chemical additives and reduce intrahepatic triglyceride accumulation.

Along with the medicines and diet, *Riyazat Motadil* (moderate exercise) would have improved splanchnic circulation, that supports overall tissue repair and metabolic function which may have led to the documented clinical stabilization.

CONCLUSION:

The case study shows the potential action of Unani medicine in treating Hepatitis B. This shows that early intervention with Unani medicine can limit the progression of disease to

complications like ascites, liver cirrhosis, and hepatic encephalopathy. Hence, Unani medicine can be used as an alternative medicine to reduce the burden of Hepatitis B.

Declaration of Patient consent:

The patient was informed about this study, and consent was taken from the patient to publish this report.

Acknowledgements

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Limitation of the study:

This case highlights Unani medicine's potential in Hepatitis B; controlled studies with proper virological endpoints and LFT reports are needed to confirm efficacy and mechanism.

Conflict of interest: The author declares that there is no conflict of interest.

Guarantor*:* The corresponding author is the guarantor of this article and its contents.

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