

**AMRAZ KABID (HEPATIC DISORDERS) IN CLASSIC
LITERATURE OF UNANI SYSTEM OF MEDICINE
(Part-I)**

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ABSTRACT

Liver is one of the vital organs on which life depends. Hepatic disorder is one of the most sought after treatment since ages still it is in process to seek its cogent care and cure. Unani System of Medicine as ancient art of healing consists the comprehensive management of many diseases including liver disorders which has been proved with passage of times. In this paper, basic concepts of liver diseases along with characteristics, signs, symptoms and treatments with Unani drugs and formulations tried and tested by ancient physicians written in classical literature, original manuscripts and rare books are presented. The monograph on liver diseases has been divided in four parts. Part one is presented here and remaining parts will be published in subsequent issues.

Key Words: *Kabid, Unani, Classical Literature*

Introduction:

The liver is an organ of vital importance to the human body and its main functions include processing nutrients from food, production of bile, removal of toxins from the body and building of proteins. It also helps in supporting the storage of glycogen, dismantling of red blood cells and secretion of hormones. Any threat to the functioning of the liver can prove fatal to the body.

Basic concepts, theories and treatments of hepatic disorders are scattered with detailed descriptions in classical literatures of Unani Medicine written by renowned Unani scholars such as Firdaus Al-Hikmah by Ali Ibn Abbas Rabban Tabri, Al Qanoon by Ibn Sina, Kamil Al-Sana'ah by Ibn Abbas al-Majusi, Al-Havi by al-Razi etc. Many aspects of liver diseases

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are covered in Unani system of medicine which can not be exactly described in western medicine such as *Sue Mizaj Kabid* (Distemperament of liver) etc. The elaborate explanation of liver disorders in Unani literature has not been presented extensively in English language till date. Some works on liver diseases have been done in Urdu language but very few books are available in English. Some research works also have been carried out on some simple and compound Unani drugs used in liver disorders which have been published in the journals but no broad scope classification of liver diseases has been prepared.

Indigenous household cures for the ailments especially in those field where modern synthetic medicine has not yet provided any relief like liver disorders, should find a proper place in our national health endeavour.

Therefore it is utmost important to compile, categorize the diseases and present the study as per the scientific standard for making it accessible to those professionals who are unaware of Arabic, Persian or Urdu languages and want further research in this subject because major literatures of Unani Medicine are available only in the languages of Arabic, Persian and Urdu.

Almost every major literature on Unani medicine consists at least a Section or the other on liver disorders; therefore it is very difficult to compile all of them, although I had tried my best to procure the essence of Unani concepts about liver diseases and their management with natural drugs.

Much interest has centered on the liver from the earliest times as knowledge grew for its relation to the well being of human and animals. We owe a great deal to the medical persons of yore for a clear concept of the body, disease and medicine and their clinical implication. The studies of liver, heart and other organs aided by modern apparatus and equipment have become more elaborate. But still the liver disease is one of the few ailments which has no proper cure in western modern synthetic drugs therefore Unani has the potential to fill this vacuum. The basic concepts, theories and philosophies of medicine still demand an objective re-interpretation and research with creative thinking.

Linking the past with the present going back again and again to the vast reservoir of empirical knowledge of classic traditions derived from experiments and observations for culling out new ideas for study and investigation is the motto of Unani Medicine.

Present study also aims to highlight the liver disorders and its cure by nature in contemporary Medicine. The document prepared on concepts of Liver disorders and its management with Unani drugs will instill distinct scientific interest in medicinal plants as opposed to synthetic drugs by finding the natural drugs that are beneficial for the health.

The study finally may fulfill the needs of the scholars and scientists who with a mind free of bias and prejudice are willing to accept the challenge of liver diseases and to find the cure through natural drugs. It will make Unani concepts about liver disorders in public domain due to its global popularity leading to collaboration and intra AYUSH referral.

Salient features:

1. Present study primarily focuses on compilation of the materials on basic concepts, theories and philosophies of liver diseases regarding the characteristics, signs, symptoms and treatments with Unani drugs and formulations from original manuscripts and rare books written by renowned Unani scholars and their tried and tested drugs.
2. Drugs of herbs, animals and minerals origin mentioned in Arabic and Persian languages, probable scientific names are given based on vernacular names and their equivalents mentioned in Unani Formulary of India, Unani Pharmacopoeia of India and other Materia Medica.
3. As per modern classification, liver diseases are also categorized and various suitable natural treatments are summarized in the last few Sections.

CONTENTS of *Amraz al-Kabid* (Liver disorders)

- Section 1 *Kulliah Ahwal al-Kabid* (General states of the Liver)
- Section 2 *Istidlal al-Kabid* (Evidences or signs from which the states of the liver are inferred)
- Section 3 *Alamat Amzjah al-Kabid al Tab'iah* (Signs of the normal temperaments of liver)
- Section 4 *Kalam Kulli fi Muallijat al Kabid* (General discourse on treatments of Liver)
- Section 5 *al Ash'ya al Dharrah lil Kabid* (materials harmful for the liver)
- Section 6 *al Ash'ya al Muafiqah lil Kabid* (substances suitable for the liver)
- Section 7 *Amraz al Kabid* (Liver disorders)
- Section 8 *Dho'f Al-Kabid* (Weakness of the liver)
- Section 9 *Alamat Sue Mizaj al Kabid* (Signs indicating disturbed temperament of the liver)
 - Sue Mizaj Harr* (Defective hot temperament)
 - Sue Mizaj Barid* (Abnormal cold nature of liver)
 - Sue Mizaj Yabis* (Abnormal Dry nature of liver)
 - Sue Mizaj Ratab* (Abnormal Moist nature of liver)
- Section 10 *Sighr Al Kabid* (Atrophy of the Liver)
- Section 11 *Sudad Al Kabid* (Obstruction in the liver)
- Section 12 *Nafkhah, Reeh Al Kabid* (Flatus in the liver)
- Section 13 *Wajae al Kabid* (Pain in the liver)
- Section 14 *Sharqa al Kabid*

- Section 15 *Waram al Kabid* (Enlargement/Swelling of liver)
 Section 16 *Dubaila* (Abscess of the liver)
 Section 17 *Zarbah, Saqatah wa Sadmah ala al Kabid* (Trauma, rupture and Injury to the liver)
 Section 18 *Khafqa al Kabid*
 Section 19 *Hasat al Kabid*
 Section 20 *Ratubat Aariza lil Kabid* (Fluids affecting the liver)
 Section 21 *Asnaf Indifa'at min al Kabid* (Types of excreta expelled from the liver)
Ishal Kailusi, Ishal Ghusali (Blood stained diarrhea), *Ishal Marari*
 (Bilious diarrhea) *Ishal Sadeedi* (Pus mixed Diarrhea)
 Section 22 *Su Al-Qinya* (Pre Ascitic State)
 Section 23 *Istisqa* (Ascites) and its types: *Lahmi, Ziqqi, Tabali*
 Section 24 *Bazl* (Tapping)
 Section 25 *Yarqan* (Jaundice), *Yarqan Asfar* (Yellow Jaundice)
 Section 26 Liver disorders in Modern literatures and its cure by Nature
 Section 27 Hepatitis (*Waram al Kabid*)
 Section 28 Types of Hepatitis
 Section 29 Jaundice
 Section 30 Cirrhosis (*Talyyuf al Kabid*)
 Section 31 Liver cancers (*Sartan al-Kabid*)
 Section 32 Diet for hepatitis sufferers
 Section 33 Simple drugs (*Advia Mufradah*)
 Section 34 Compound drugs (*Advia Murakkabah*)

Liver disorders and its management in Unani literatures

The liver works as a huge laboratory within the human body and is responsible for filtering the received blood that is packed with nutrients and other substances absorbed through the large intestine.

The liver carries out complex, biochemical processes that eliminate toxins, synthesize proteins and vitamins and make it easier to exploit other substances.

Further the liver produces the bile that aids in the digestion of fats and eliminates certain substances. This organ has considerable functional capacity, as 75% to 90% of the liver must be damaged before values indicating a disorder will be noticed in the blood.

The liver is so vital for life that, once it has been irreparably damaged, the patient's only hope for survival is to receive a healthy liver transplant.

Certain emotional problems would seem to have negative repercussions for the liver.

In old times the liver was believed to house the emotions. Hippocratic, Islamic, and Medieval physiology all believed the liver produced two of the four basic humors, irascibility and melancholy, and an excess of these was associated with very specific emotional changes. Some expressions related to this, such as 'to be in bad humor' or 'to have a visceral hatred of something', etc are still in use today.

Gall bladder disorders

The gallbladder a hollow organ is used to store the bile that is continually produced by the liver until it is needed for digestion.

Bile is a digestive juice, viscose and green in color, secreted by the liver and stored in the gallbladder. It aids in the digestion of fats by separating them into small droplets, so that they can be broken down more easily by the digestive enzymes.

Pancreatic disorders

Pancreas, a large elongated exocrine gland located behind the stomach and is surrounded by the duodenum into which it secretes pancreatic juice, this juice aids in the digestion of carbohydrates, proteins and fats, although bile also plays a part in the digestion of the fat. The pancreas also acts as an endocrine gland, secretes the insulin that flows into the blood. This hormone is essential for sugar metabolism, and a lack of insulin will lead to diabetes.

Section 1: *Kulliah Ahwal al Kabid* (General states of the Liver).

Liver is one of the principal vital organs of the body and the source of origin of physical or somatic power (*Quwwat Tabi'iyah*) and the seat of digestion of chyme and humors. The best liver is of birds especially chicken (*Dajaj*) and duck (*Batt*), as their main diet is fruits and vegetables. Amongst animals, the best liver is that of a year old goat, and the worst is of large-sized old animals.

The color of the liver is red, and matrix of substance is like flesh or clotted blood but there are fibers also like flesh. Non-pulsating vessels arise from it and are called veins, some of which are abdominal (concave side) and some on its dorsal or convex side. (Zakhira Khwarizm Shahi by Ismail Jurjani) ¹

Liver extends from the inner side of body to the outside and it is longest in that axis. The portal vein which is called '*Bab al Kabid*' is also on the abdominal side (the concavity of the liver) and has many tributaries to it. The liver depends on these branches for bringing the chyle (*Usara Ghiza*) to the liver to be turned into blood which is supplied to all the organs through the inferior vena cava, for this reason the matrix of liver resembles the substance of blood. (Kamil as Sana'a by Ali Ibn Abbas Majusi) ²

Liver is the chief of the organs related to alimentary system. According to Avicenna, liver is that organ which forms blood; it is a huge factory where the various humors of the body are found in plenty due to digestive and metabolic changes.

Liver is a red flesh like a clotted blood. The vessels that spread in the flesh of the liver are in reality the roots of those vessels which grow from the liver; there is no nerve fiber in the substance of the liver. Liver sucks the chyle from the stomach and intestine through the branches of portal vein called *Masareeqa* (mesenteric vessels) in concave parts, then after maturation, liver turns it into blood and sends it away through *Arq Ajwaf* (inferior vena cava) to all parts of the body, the liquid parts coming as by product of metabolism is sent to the kidneys while yellow froth produced is sent to the gall bladder in form of bile and black residue is sent to the spleen. The surface of liver towards the stomach is dented inside and outer part towards the diaphragm is convex to avoid any problem due to constant movement of the diaphragm. The dented surface towards the stomach is attached to gall bladder.

The substance of liver is insensitive but the capsule covering it is sensitive due to nerve supply, it also helps in attachment with other organs. It is also supplied with several minute blood vessels which preserve its innate heat and *Ruh*; it also helps in equal distribution of chyle throughout the liver.

Liver of human being is largest among the animals equal to him in weight and volume. It is reported that the animal has intense eating habits with weak heart is gifted with large liver. There is a thin nerve between the liver and stomach but both are not sharing except in a major trouble like inflammation of liver.

Two veins arise from liver one is arising from its concavity (abdominal side) named *Bab al-Kabid* (Portal vein) which directs the nutrition towards liver and other is arising from convexity of liver (upper side) named *Al Ajwaf* (inferior vena cava) which transports the nutrition from liver to other organs. Both the vessels branch, re-branch and spread in the substance of the liver in order to keep up the circulation of blood and the fluids entered the liver via the portal vein may reach the inferior vena cava after changes and metabolism.

Liver is the site for production of blood and it is also the site for separation and changing of bile, black bile and watery fluid. Sometimes the lesion may occur simultaneously in both functions such as production of blood and separation of humors and some times lesion occurs only in production of blood only unlike in separation process but when lesion occurs in separation process, it leads to defective production of blood. Liver contains all four *Qua Taba'ia* (natural powers), majority of these lie in the flesh and remaining powers may be found in the *Masariqa*. (Al-Qanoon by Ibn Sina, Kitab al-Miah by Abu Sahl Masihi, Kitab al-Umdah Fi al-Jarahat by Ibn al-Qif Masihi) ³

The stomach and intestine mature the food with the help of heat and secretions and turn it into a thick liquid paste like porridge. Then this liquid through invisible vessels goes to liver, the liver changes it into its own color and extracts from the nutrition through inferior vena cava clear and stable blood is distributed to all organs.

(Firdaus al-Hikmat by Ali bin Rabban Tabri) ⁴

Galen had described the anatomy of liver in his book '*Kitab Al-Tashreeh*'. ⁵

Section 2: Evidences and signs from which the states of the liver are inferred

1. Palpation: to diagnose swellings
2. Pain specific to liver
3. Functions arising from the liver
4. Diagnosis by functions of the neighboring organs like stomach, intestine, kidney and gall bladder
5. Diagnosis by the actions of remote organs like head and spleen
6. General conditions of the whole body like color, obesity
7. Condition of hair, veins
8. Structural state of other organs, age and habit also throw the light on the state of liver

Details on classifying these signs

1. Palpation: Sensation of temperature can tell the coldness or hotness of the liver. Feeling of the consistency of the liver such as hardness of the liver may be due to inflammation or flatulence. Lunar shape enlargement of liver due to flatus indicates that swelling is in the liver substance, but if the enlargement is rectangular or any other shape then swelling may be in other organs of the abdomen.
2. Inference obtained from Pain: Feeling of pulling down and heaviness may be either due to *Warm* (inflammation) or *Sudda* (obstruction), if there is no heaviness it may be due to *Reeh* (wind), feeling of heaviness indicates the presence of the matter in the liver parenchyma either it is swelling or obstruction, feeling of heaviness with throbbing sensation points to the matter in near the capsule encircling the liver.
3. Evidence obtained from functions of the liver: Functions of the liver like digestion of foods, its absorption and transport of the blood to whole body, sending extra fluid to the kidney, bile to the gall bladder and black bile to the spleen should be carefully monitored. Presence of any defect in these functions and without involving of other organ means the defect is in liver itself.
4. Diagnosis by actions of neighboring organs: Thirst, hiccup, appetite and digestion are

the functions of stomach but may point to the state of the liver. Dyspnea due to lung or diaphragm involvement, examination of stool and urine also throw the light on the state of the liver and its conditions. Likewise diseases related to head and spleen, condition of tongue such as its color, smoothness and roughness, color of lips can also help in diagnosis.

5. Inference obtained from general states of the body: Red white color of the skin is sign of healthy liver while yellow pigmentation may be indicative of liver disease. Muscular obesity is indicative of heat and humid of liver while obesity due to accumulation of large adipose shows cold and humid liver, thin body mass is all about dryness of liver.
6. Judgment from the appearance of other organs: Fullness and width of veins point toward the enlargement of liver. Short or long finger also specify the small or large liver. Veins arising from liver, prominent and thick point to hot nature of liver while thin vein indicate cold nature.
7. Diagnosis by the product of liver: Excess production of bile indicates heat of liver, excess production of black bile is sign of intense heat of liver or dry cold. Production of pure blood is indicative for healthy liver, if the blood produced by liver is thin and of loose consistency or resembling bile or black bile indicates disease of liver as it occurs in *Istisqa Lahmi*.
8. Conditions of heart opposing the states of the liver: Heat and humidity of liver overpowers the cold and dryness of heart poorly while dryness of liver overpowers the humidity of heart permanently. Heat of the heart overcomes the humidity of liver more than its dryness. ⁶

Section 3: Signs of the normal temperaments of liver

Signs of the hot nature of liver:

1. Veins are dilated and prominent containing hot blood with increased temperature of the body unless competed by the coldness of the heart because cold temperament of heart equalizes the heat of the liver.
2. Increased production of yellow bile by liver in young age while increased production of black bile in old age.
3. Abundant growth of black hair on *Sharaseef* (epigastrium)
4. Intense desire for food and drink

Signs of the cold nature of liver: contrary to above signs

Veins are contracted containing thin and watery blood with weak power which makes susceptible to fever.

Signs of the dry nature of liver: The blood is thick and small in quantity, veins are hard with dryness of whole body, and hairs are dense and curly. Humid nature of heart can not overcome the dryness of liver but dryness of liver overpowers the humidity of heart and hot nature of heart conquers the humidity of the liver

Signs of the hot and dry nature of liver:

1. The blood is thick; veins are dilated with hardness and congestion, abundant growth of black hair on *Sharaseef* (epigastrium).
2. Increased production of yellow bile and black bile in the end of winter season
3. Heat and hardness of other organs if not contradicted by the coldness of heart.

Signs of the hot and moist nature of liver:

1. The blood is abundant with good consistency
2. Veins are dilated with softness, color is red without paleness
3. Growth of black hair on *Sharaseef* (epigastrium) is less abundant than hot and dry nature with no dense or curly hair.
4. Strength of the body comes from heat and humidity of liver. Human body becomes healthy in case of heat of the liver while humidity invites the infection and diseases.

Signs of the cold and dry nature of liver:

1. The body and blood is less warm with less quantity of blood.
2. Veins are constricted and hidden with hardness.
3. Growth of less hair on *Maraq* (Hypochondrium) with dryness of whole body.

Signs of the cold and humid nature of liver:

Contrary to that of hot and dry nature of liver in all aspects, for example

1. The blood is thin; veins are contracted with softness, there is no hair on *Sharaseef* (epigastrium).
2. Decreased production of yellow bile. ⁷

Section 4: General discourse on treatments of Liver

Maintaining the health of liver by suitable diets and to counter the liver diseases by substances contrary to the diseases (hetero-pathy) is essential. Same principles for management of inflammation, ulcers, size of the liver or opening of the obstruction should be adopted as in such conditions elsewhere.

Most appropriate time for giving medicine to the liver patient especially in liver obstruction when it is confirmed that food taken has been metabolized after digestion and absorption in the stomach and also has been distributed in the liver to their destination. Sufficient time

should be elapsed between taking food and medicine and as a habit this time corresponds to the period between waking up from the sleep and having the bath. It is also essential that use of *Advia Muhallila Mufattiha* (Dissolving drugs) should be mixed with tonic and astringent drugs in the case of obstruction and swelling of the liver except in the case of extreme dryness. Severe cooling should not be done to liver otherwise it will lead to *Istisqa* (Anasarca) nor extreme warming should be done which can cause atrophy of the liver. The physician must know the nature of the liver in the patient and then use his skill accordingly for the treatment.

Remember if a mistake committed in the treatment of liver, there will be trouble first in liver itself then in its vessels and then whole body will suffer. It is a blunder to expel the toxic matters in concavity of liver by diuretic rather than purging and also to remove the matter present in convexity of liver by purging where diuresis is suetable.

The medicines prescribed for the liver should be powdered finely so that they may reach liver easily in a shortest possible time irrespective of the fact whether they are hot, cold or astringent. The character of *Mulattif Advia* besides removing obstruction is also to create warming of the blood so care should be taken. *Maaul Usul* and other similar drugs which can change the balance or proportion of the humors in liver if used regularly for over three days it should be followed by laxatives while diuretic action is done by *Maaul Usul* itself. All varieties of *Kasni* (Cichorium) mainly bitter one is beneficial for painful troubles of liver but hot nature patients should be given *Sikanjabeen* instead of *Kasni* while *Maaul Asl*, flesh of cockle (*Halzun*) or liver of *Ze'eb* (Wolf) are beneficial for cold nature patients.

Principles of the treatment according to Mohammad Ibn Zakaria Razi:

Disease in the liver may be due to disturbed temperament, faulty composition, and loss of continuity, swelling or flatus. Sometimes the disease is primary to liver and sometimes it arises secondary to diseases of other organs. Liver has relation with other organs like liver, stomach, duodenum, spleen, gall bladder, mesentery, diaphragm, lungs, kidney and brain through the nerves. Most of the gastric diseases cause disturbance to the liver like appearance of *Suddah* and swelling, because the food particles reach to the liver come through the stomach.

Sue Mizaj Kabid may be hot, cold, wet or dry and may be associated with matter or not. Liver is the prime organ which preserves the humors due to its innate heat, therefore in case of *Sue Mizaj Harr*, intense cooling should be avoided otherwise it will create *Istisqa*. Similarly in case of *Sue Mizaj Barid* intense heating should be evaded as it may cause atrophy of liver, so moderate cooling and warming with fine management is required. For

example some warming drugs should also be included along with cooling drugs and in case of obstruction some fragrant and astringent drugs are also included along with dissolving and deobstruent drugs that may protect the liver and contain not too much drying agents. Utmost precaution should be taken in the line of treatment, for example diuresis should not be done where purging is required or vice versa otherwise the harmful materials may be entangled in the matrix of liver.

Use of liniment (*Tila*) is much effective to regulate the nature of liver, therefore the required drugs must be powdered very fine so that it can penetrate through the narrow passage and as a vehicle a drug is included that can help in reaching the drugs to its target. Some cold drugs should be mixed with hot drugs and vice versa.

The appropriate time for drug administration in liver disease is post digestion period; therefore usually the physicians administer the drugs in late night after awakening and before taking bath. ⁸

Section 5: Matters harmful for the liver

Eating a second meal after taking a meal and before its proper digestion or carelessness in eating and drinking order is extremely risky for the liver.

Drinking large amount of cold water before breakfast or just after bath or exercise or coitus is also hazardous for the liver. After these conditions the liver is hot and inflamed so it may absorb a lot of water after drinking large amount and sometimes it may result in ascites. In case of severe thirst something should be added in normal water and given slowly to sip, not to be gulped down at once.

All *Lazujat* (glutinous) things are injurious to the liver as they produce *Suddah* (embolism), a wheat that is viscous also harmful.

Sharab Hulu (Alcohol) creates embolism in liver but it cleanses the matter in the chest, the reason is that *Sharab* reaches the liver very quickly from the stomach and it does not remain long enough to allow the completion of hepatic digestion for food residue, then its fine substance are absorbed in the vessels leaving the residue behind in the liver to cause emboli.

Section 6: Matters suitable for the liver

1. Drugs that have the property of dissolving the emboli due to bitterness or any other character and have astringency to strengthen.
2. Drugs having aroma which is suitable to the essence of the liver and checks the infection like *Darcheeni* (*Cinnamomum officinalis*), *Izkhar* (*Rusa grass Andropogon shoenanthus Linn.*) (*Cymbopogon schoenanthus*), *Mur Makki* (*Commiphora myrrh*) (*Commiphora myrrh*) etc.

3. Drugs that have the property of cleansing and purifying the septic material from the liver.
4. Drugs that have the quality of maturation and laxation especially with astringency and strengthening such as *Zafran (Crocus sativus)* or they are delicious along with above characters like *Zabeeb (Vitis vinifera Linn.)* (Raisins) or the drugs which are quick absorbable like *Sharab Raihani* are beneficial for the liver that have not much heat.
5. Drugs that possess above mentioned properties along with good taste will be much beneficial for liver diseases like raisin, *Ficus hispida* Linn etc.
6. Drugs that possess above mentioned properties and resist acquiring the infection and decay are immensely beneficial for liver diseases.

Talkhashquq (Hinduba, Kasni, Cichorium intybus Linn.) is beneficial in hot diseases of liver with their quality. In cold conditions of the liver above drugs should be given mixed with honey as they excrete cold humor through urine. Suetable foods for liver are that produce nice chyme, sweet foods are also favorable to liver as they act as tonic, cause fattening and enlarging the mass of liver but it also can produce embolism in the patient who suffer with inflammation of liver where it can change rapidly into *Murar* (bitterness). *Fustaq* (Pistachio) is beneficial for liver due to presence of aroma, astringency and property of opening and cleansing the alimentary canal but it also has warming effect. *Funduq* is useful for all type of liver because it contains not much heat, acts as *Mufattih* (deobstruent) and produces good chyme. Flesh of cockle (*Halzun*) and liver of *Ze'b* (Wolf) are also beneficial for the liver.

Section 7: Liver disorders

The diseases occur in the liver substance are:

1. Disturbance of liver temperament (*Sue Mizaj al Kabid*)
2. Disorders in liver structure
3. Swelling or enlargement of liver (*Warm al Kabid*)
4. Flatulence or abscesses that may be ruptured
5. Rupture of the liver is more possible than other organs, death may occur if a big vessel ruptures with excessive loss of blood
6. Certain diseases occur in the liver secondary to the diseases in other organs mainly in stomach, spleen, gall bladder, diaphragm, lungs, mesentery etc. First effect in the vessel which exists on the concavity of the liver then the harmful effect reaches to the substance of the liver often to a great extent. As far as diaphragm, lungs and kidneys are concerned, first their diseases affect the vessels that exist on the convexity of the liver then to the liver itself. Mostly the liver gets affected with the diseases of the stomach such as indigestion and sometimes food is expelled undigested by vomiting.

The matter of diseases on the convexity of the liver is expelled through the urine, sweat and epistaxis while from concavity of the liver is expelled through loose diarrhea, bilious vomiting, and haematemesis and through the gall bladder also. ⁹

Section 8: *Dho'f Al-Kabid* (Hepatic insufficiency)

A disease in which all the four faculties of liver i.e. *Quwwat Hadima* (digestive power), *Quwwat Masika* (assimilative power), *Quwwat Jadhiba* (absorptive power), *Quwwat Dalī'a* (expulsive power) or some of these faculties become weak. The causes of this type of weakness are the impaired temperament of liver or whole body, diseases of the adjoining organs like gall bladder, spleen, kidneys, uterus, intestines and lungs, diseases of the liver itself e.g. ulcers, congestion, cirrhosis, calculus, obstruction inflammation or abscess and injuries of liver.

Abul Hasan Ahmad Ibn Mohammad Al-Tabri has written ten factors that may cause liver weakness in his book *Moalijat Buqratia*: ¹⁰

1. Atrophy of liver mass
2. Liver materials are not moderate as per quality and quantity,
3. Gall bladder is too small to contain whole of bile,
4. Disorder in liver position,
5. Vessels opening in the liver are abnormal,
6. Ribs are narrowing exerting the pressure on liver,
7. Faulty hot temperament,
8. Abnormal cold temperament,
9. Abnormal dry temperament
10. Abnormal wet temperament.

Razi: causes of liver weakness are similar but somewhat weaker than that of liver diseases for example gall bladder or spleen when they are unable to absorb bile or Sauda completely, the remaining parts may persist in the stomach and defective digested material may reach the liver and causes weakness.

Galen termed *Makbud* to that person whose liver is weak without any apparent swelling or abscess. This weakness may follow any disease of the liver whether it is due to ill nature of liver itself or any other organ neighboring the liver for example when gall bladder could not absorb the bile or spleen could not absorb the black bile or kidney and urinary bladder could not absorb the watery matter or uterus started bleeding or retention of menstruation then it causes deterioration of blood in liver and stomach because well digested chyme can not reach the liver instead weak digested or polluted chyme reaches there. Sometimes

obstruction occurs between gall bladder and liver due to abundant viscous humors in diseased bowel obstructing the flow of bile from liver into *Murarah* leading to congestion and overfilling of the liver. It is mostly occurs in *Qulanj*. Sometimes weakness occurs due to any organ in thorax as in fever. Sometimes weakness occurs due to other conditions of the body not related to liver such as sanguine inflammation, tumor, carcinoma, ulcer, flabbiness or sepsis. Sometimes weakness occurs in whole functions of the liver and sometimes in any one of its four main actions. Mostly its digestion and assimilation powers become weaker due to cold and moist while *Quwat Masika* (Retentive power) due to moistness and *Quwat Dafia* (Expulsive) get affected due to excess dryness.

Sign and symptoms:

1. Colour is one of the most indicative parameter on the condition of liver. A patient of liver may have yellowish white colour or a tinge of green and blue. Urine and stools resembling the meat soup indicate that the liver is too weak to act on the partially digested food materials sent to it from stomach and bowel. This type of loose motion is called *Is'hal Ghusali* which turns into purulent in hot nature persons and further advancing into residue of oil or burnt blood and such diarrhea often commences as bilious while in cold nature of liver like purulent blood. The patient of weak liver always suffers with somewhat loose motion.
2. Pain may occur mainly at the time of diffusion of food into liver from the stomach. *Sue Mizaj Harr* incites the humors while *Barid* makes the humors thick and slow moving.
3. Liver weakness due to gall bladder, the colour may be of jaundice sometimes accompanied with white stool due to obstruction between gall bladder and intestine.
4. Weakness due to anomaly of spleen is diagnosed by black color and spleen diseases.
5. Weakness due to anomaly in stomach is diagnosed by indigestion and ailments in the stomach while weakness due to bowel is diagnosed by cramps, colic and flatulence.
6. Weakness due to anomaly in kidney and urinary bladder is diagnosed by alteration in the characters of urine. In case the cause is any thoracic organ, the symptoms may be dyspnea, dry cough, heaviness and distension.
7. Symptoms of weak digestive power of liver: The nutrient diffused from liver to other organs is either undigested or partially digested or defectively digested may transform into poorer quality which may result into edema of eyes and face. The blood taken out of venesection in such patient contains less phlegm and more fluid. In case of weak *Quwat Masika* (retentive power), food materials cannot stay in liver for prolong time.

Worst type of indigestion is that in the beginning no digestion then very little and later on very detrimental digestion. *Ghusali Is'hal* indicates indigestion and partially digestion, white colour stools point to weak *Quwat Jaziba* (absorptive power) and *Quwat Hazima* (digestive power) that food constituents expelled in same form as entered in the liver while mixture of different materials with the stools is evidence for faulty digestion. Urine specifics can point to shape of digestion and stool points to the state of absorption.

8. Weak *Quwat Jaziba* (absorptive power) can be diagnosed by copious amount of soft and white stools; in case the urine is also colored along with these symptoms then the pathology is in absorption power provided there is no defect in the stomach. Defective power of absorption for a long time can result in emaciation.
9. Weak *Quwat Masika* (retentive power) can be diagnosed by signs of indigestion as food is not retained for sufficient time so undigested nutrients are transported to other organs of the body causing sense of heaviness in the liver.
10. Weak *Quwat Dafia* (excretory power) can be diagnosed by defective evacuation of waste products, diminished urine output, defective colour of urine and stool and lack of appetite due to deranged transport of *Sauda* (black bile) to spleen. There may be flabbiness due to collection of bile and black bile that can lead to *Istisqa* and phlegmatic *Qulanj*.¹¹

Treatment of *Dho'f al-Kabid* :

First of all, the treatment for actual cause has to be found out. Often the weakness comes out due to cold, humid or dry nature or accumulation of the toxic materials in the liver. Therefore the treatment is done by the drugs that have the action of *Taskheen* (Warming), *Tafteeh* (removal of obstruction), *Indhaj* (Maturation) and *Taf'een* (Laxation) all together with slight astringent and antiseptic. Aromatic drugs like *Zafran* (*Crocus sativus*) and some drug with bitter taste produce little astringent action. *Habb al Rumman* (*Punica granatum* Linn.), *Zabeeb* (*Vitis vinifera* Linn.), *Ghareequn* (*Agaricus campestris*), *Ghafis* (*Agrimonia eupatoria* Linn.) extract and *Afsanteen* (*Artemisia absinthium* Linn.) are also used as per their requirements and after sufficient management of liver weakness camel milk should be given to the patient.

Some effective drugs for weakness of liver:

1. Lak Maghsool (*Cateria lacca*), *Reward Chini* (*Rhubarb, Rheum officianale* Baillon.), *Ghafis* (*Agrimonia eupatoria*) extract, *Razianaj* (*Foeniculum vulgare*), *Bathua*, *Afsanteen* (*Artemisia absinthium* Linn), *Hinduba* (*Chicorium intibus*), *Kasus* (*Cuscuta reflexa* Roxb. and *Karafs*, (*Apium graveolens* Linn)
2. *Zabeeb* (*Vitis vinifera* Linn.), *Zafran* (*Crocus sativus*), *Saleekha* (*Cinnamomum cassia*),

Qasbuz Zareerai (Swertia chirata), Muqil (Commiphora mukul), Darcheeni (Cinnamomum zeylanicum Blunc.), Sunbul (Nardostachys jatamansi), Izkhar (Rusa grass Andropogon shoenantus Linn.), Mur Makki (Commiphora myrrh), Samagh al Butum (Pistachia terebinthus), Myrica nagi Thunb. (Kaiphal, Dar Sheshan), Honey, alcohol as per need, sometimes opium and Bazrul Banj (Hyoscyamus nigrum) is also added according to the condition of the patient. Galen specially appreciated this prescription because it contains all the qualities required for curing the weakness of the liver such as laxative, attenuation, and antiseptis etc.¹²

3. Other useful drugs for liver that contain a little warming action are as follows:

Nardeen (Nardostachys jatamansi) and Afsanteen (Artemisia absinthium Linn) are pounded and mixed with honey.

Local application as *Zamad* (Poultice), Ingredients:

Hasram (Vitis vinifera Linn.), Rose, sprouting leaves of grapes are powdered and made into paste to be applied on the liver as poultice. All other formulations of poultices mentioned earlier can be used also.

In case of weak digestive power of liver: Drugs are used that contain astringent, aromatic and *Inzaj* (maturation) like the compound of *Sunbul (Nardostachys jatamansi), Bisbasa, Jauzbuwa (Myristica fragrans Houtt.), Kundur (Boswellia serrata Roxb, Olibanum), Mastagi (Pistacia lentiscus), Qasb al Zareera (Swertia chirata), Sa'ad*

In case of weak Retentive power of liver: Drugs are used that contain astringent and tonicity and less warming like *Gulnar*, Rose flower and *Tarasis*.

In case of weak absorptive power of liver: Drugs are used that contain strengthening action and less astringent and also remove the obstruction, in such condition mostly *Zamadat* (Poultice) are applied.

In case of weak excretory power of liver: Strengthening of liver and warming of kidney and other viscera and dilatation of pores should be done.

Galen's most effective formulation for liver:

1. *Maveez Munaqqa (Vitis vinifera Linn.)*,
2. *Balchad (Nardostachys jatamansi)*,
3. *Charaita, (Swertia chirata)*
4. *Dar sheeshan,*
5. *Mur Makki (Commiphora myrrh)*
6. *Gum of Butum (Pistachia terebinthus)*,
7. *Izkhar (Rusa grass Andropogon shoenantus Linn.)*,

8. *Muqil (Commiphora mukul)*,
9. *Darcheeni (Cinnamomum zeylanicum Blunc.)*,
10. *Saleekha (Cinnamomum cassia)*,
11. *Zafran (Crocus sativus)*
12. *Asf (honey)*

All these drugs are made into confection. (Al-Havi by Razi)¹³

Diets: Oily or viscous or heavy foods are not suitable for weak liver. Useful diets are meat of small animals, half boiled egg yolk, wheat and barley water and for cold nature patients, liver mixed with honey is better.

Section 9: *Alamat Sue Mizaj al Kabid* (Signs of hepatic dyscrasia ‘disturbed temperament of the liver’)

Hepatic dyscrasia is the impaired temperament of liver which is exclusively simple in nature and not Maddi (organic). It is of two types; single and compound. Single is subdivided into four type i.e. Su' Mizaj Harr, Su' Mizaj Barid, Su' Mizaj Ratb and Su' Mizaj Yabis. Compound is again subdivided into four types i.e. Su' Mizaj Harr Ratb, Su' Mizaj Harr Yabis, Su' Mizaj Barid Ratb and Su' Mizaj Barid Yabis. According to the involvement of humours this compound type is subdivided in *Safrawi* (bilious), *Balghami* (phlegmatic), and *Sawdawi* (melanotic). This intemperament of liver leads to weakness of liver, *Istisqa*, *Su'al-Qinya*, pain of liver, and inflammation of liver.

Sue Mizaj Harr (stranged hot temperament)

Causes: Nature of liver is inclined to heat due to four reasons:

1. Production of intense heat due to ingestion of food
2. Excessive bile production in the duct
3. Obstruction between the liver and gall bladder
4. Excessive use of fermented drinks

Signs:

1. Intense thirst not quenched by any amount of water,
2. Loss of appetite, inflammation,
3. Pale urine, quick and regular pulse,
4. Other symptoms associated with heat of the body followed by excoriation.
5. Sometimes constipation occurs without pain or heaviness in the ribs, it is accompanied with vomiting of yellow, green and red color.
6. Timismus in passing the stool
7. Tongue will be rough and body dry

Besides, general habits, age, professions and earlier treatments also give clue to the liver diseases. Moderate defect in hot nature of liver causes production of bile while excessive defect in hot nature of liver causes production of black bile and is related diseases like melancholia, insanity etc. *Ishal Ghusali* (Diarrhea carnosae) with loss of appetite mostly occurs due to weak liver caused by hot nature, it also causes passage of dry and burnt stools except when defect of liver temperament that causes the combustion of blood and humors then diarrhea occurs. When there is combustion, swelling or abscess in the liver and passage of black matter in the stool then it may be substance or flesh of the liver that become infected. It is also to be noted that every black matter passed in the stool may not be harmful. Passage of slops or pus like foul smelling material in stool may be found in epidemic conditions.

Treatment for *Sue Mizaj Harr*

Talteef (Attenuation) is necessary but it should not be intensified, severe *Irkha* (Relaxation) by humid watery drugs also should be avoided. *Mubarridat Ghaleeza* (thick cold) like drugs that may cause obstruction should also be shunned.

Mubarridat (Cooling drugs) used in this conditions must have the quality of *Jila* (cleansing), *Tafteeh* (removing of the obstruction) and causing quick assimilation of the food and should be moderate but potent astringent.¹⁴

All these properties are possessed by *Ma al Shaer* (Barley water). *Hinduba* (*Chicorium intibus*) both wild and cultivated form is useful for all conditions of liver because it contains mild cooling, slight *Murar* (bitterness) to remove the embolism, moderate astringent and tonic, These drugs are used with dry and fresh coriander. *Zarishk*, *Berberis aristata* and Tamarind are also effective for liver. In case of obstruction in the liver all the above mentioned drugs combined with *Karafs*, (*Apium graveolens* Linn.) and *Sikanjabeen* is very beneficial. A very much useful formula is given here:

1. *Usara* (Extract) of *Hinduba* (*Chichoreum intibus*)
2. *Usara* (Extract) of *Kakanj* (*Physalis alkekenji*)
3. *Usara* (Extract) of *Enab al Salab* (*Solanum nigrum*) 70 gm each
4. *Usara* of Fresh *Kazbara* (Coriander extract)
5. *Razianaj* (*Foeniculum vulgare*) 50 gm each
6. *Zafran* (*Crocus sativus*) 2 gm.

All these drugs are mixed together and given to the patient. To neutralize the heat of the liver, oil of rose and apple should be given to drink with cold water prior to use of above drugs.

Useful drugs for *Sue Mizaj Harr*:

1. *Aspghol* (*Plantago ovata*) 10 gm with sugar and cold water is given
2. *Usara al Qara* (Extract of roasted pumpkin and cucumber)
3. Curd of cow milk,
4. Juice of *Punica granatum* Linn., apple, guava and fresh rose
5. *Banafsha* (*Viola odorata* Linn).

All these drugs are mixed together and given to the patient.

If still fever or temperature is not relieved then *Maa al Jubn* (whey water) with *Sikanjabeen* should be given each day for 17 days with *Haleela* (*Terminalia chebula* Retz.) 9 gm, *Lak Maghsool* (*Cateria lacca*) 3 gm and *Karafs*, (*Apium graveolens* Linn.) 2 gm.

After two weeks milk of camel mixed with *Advia Mufattiha* (Deobstruent drugs) like extract of *Ghafis Gentiana olivierii* Griseb. Seeds of *Kasus* (*Cuscuta reflexa* Roxb.) and *Hinduba* (*Chicorium intibus*) should be started gradually. Sometimes need arises to use *Izkhar* (*Rusa grass Andropogon shoenantus* Linn.) and narcotic drugs like confections made of opium or cannabis but its use must be discouraged.

Useful and tested formulations for hot liver are *Qurs Tabashir*, *Qurs Kafur* and *Qurs Zarishk* (*Berberis aristata*)

Flower of *Khalaf* (*Salix caprea*), *Neelofar* (*Nymphaea alba*, *Water lilly*) each 30 gm, Red rose 36 gm, *Kafur* 8 gm, Red *Sandal*, *Lak Maghsool* (*Cateria lacca*) each 21 gm, *Foofil* (*Areca catechu*) 24 gm, *Zafran* (*Crocus sativus*) 9 gm, *Rewand Chini* (*Rhubarb, Rheum officianale* Baillon.) 15 gm, *Teen Qabrusi* (Earth of Cuprus), *Mastagi* (*Pistacia lentiscus*), *Persiaoshan* (*Adiantum capillus veneris*), each 9 gm, All these drugs are pounded and mixed together with the *Arq Mako* and *Arq Kasni* (water of *Solanum nigrum* and *Chicorium intibus*) to make the tablet of 4 gm each. Dose: one tablet to be given with juice of *Mako* (*Solanum nigrum*) daily.

Zamad is also beneficial. For this *Khirfa*, *Portulaca oleracea* is crushed with rose oil, cooled and applied as paste.

Qairuti (liniment) formulation: Red and white sandal each 28 gm, *Foofil* (*Areca catechu*), *Banafsha* (*Viola odorata* Linn) dry each 14 gm, Rose 21 gm, *Zafran* (*Crocus sativus*), *Afsanteen* (*Artemisia absinthium* Linn) each 14 gm, *Kafur* 6 gm, All these drugs are mixed together with the oil of *Bed Mushk* (*Salix caprea*) to make *Qairuti* (liniment) and applied with a wide area on the liver as paste.

Prescription of Ahmad Tabri: leaf, seeds, root and stem of *Mako* (*Solanum nigrum*) is dried and extracted then given with *Sikanjabeen*, it is beneficial.

Prescription of Galen: *Kasni* seeds and *Zarishk* (*Berberis aristata*) cooked in Barley water is the best drug for liver as it contains *Nuzj*, *Jila*, *Taftceh*, *Taleen* and *Taqwiat*.

Diets in abnormal hot nature of liver: Vegetable soup, barley water, cooked *Hinduba* (*Chicorium intibus*), fresh coriander; *Khas* (*Andropogon muricatus*), beet root, sour curd and milk are useful. Among the fruits *Punica granatum* Linn., apple, a little guava, *Safarjal* (*Cydonia vulgaris*), mulberry, vinegar and muskmelon before and after meal is also beneficial. All these articles should not be taken continuously as they may produce obstruction due to much cooling. The permitted foods are mild sour resins, less sweet grapes, spinach, lentil and *Bunduq* (Hazelnuts) is also good as it is deobstruent and nutritious. Small fish cooked with vinegar, easily digestible meats like birds, lamb.

Harmful foods for Liver: spleen, heart and difficult digestible flesh of the animals, very hard boiled egg, fats and alcohol.

***Sue Mizaj Barid* (Abnormal cold nature of liver):**

Liver is inclined to coldness which affects their ability to purify the blood and predispose for *Istisqa Lahmi*.

Signs:

1. Whiteness of lips and tongue
 2. Lack of blood and difficulty in circulation
 3. Excess of phlegm and lack of thirst
 4. Change in the color of the body
 5. Urine is white, thick and phlegmatic
 6. Weak pulse, increased appetite but in case of excess cold of liver appetite is abolished absolutely. Sometime stool may be hard without smell or may be loose due to weak absorption without its regularity.
 7. This nature is not accompanied with frequent diarrhea, sometimes it is followed by fevers. Diarrhea in the beginning may contain watery pus then becomes thick.
 8. Loose motion like water of fresh meat with good appetite in the beginning points to the coldness of liver,
 9. Later on, lack of appetite may occur due to fever caused by weakness of liver.
- Habits, age, foods and earlier factors such as drinking cold water before breakfast or just after coitus or bathing also point to the cold nature of the liver because inflamed and hot liver absorbs a lot of water at that time. Cold nature of liver is accompanied with matter. There will be sour in mouth and looseness in stool which colour will be black and green rather than red and yellow.

Treatment for Sue Mizaj Barid of liver

Syrup made from *Afsanteen* (*Artemisia absinthium* Linn) with *Sikanjabeen Asli* (Oxymel of honey) is useful in such condition. *Qurs Afsanteen* (Tablet of *Artemisia absinthium* Linn) before going to sleep at night is also beneficial; likewise seeds of hot nature drugs and milk of Arabian camel with 100 gm sugar because they neutralize the coldness of liver and excrete the cold humor through urine and stool and dissolve the obstruction in liver. *Dawa al Kurkum*, *Dawa al Lak Maghsool* (*Cateria lacca*) or *Dawa al Qust* (Costus root) at bed time is also beneficial.

Ghafis (*Gentiana olivierii* Griseb or *Agrimonia eupatoria*), Jadwar (*Delphinium denudatum* Wall.), *Asarun* (*Asarum europium*) each 6 gm before breakfast followed by fermented drink, decoction of *Qust* (Costus root) and *Afsanteen* (*Artemisia absinthium* Linn) with sweet almond oil 6 ml, pistachio oil 6 ml or bitter almond oil and castor oil is also better.

The following decoction is also effective:

1. *Razianaj* (*Foeniculum vulgare*) seeds
2. *Karafs*, (*Apium graveolens* Linn.) seeds
3. *Aneesun* (*Pimpinella anisum* Linn),
4. *Mastagi* (*Pistacia lentiscus*) each 6 gm,
5. Bark of the root of *Razianaj* (*Foeniculum vulgare*)
6. Bark of the root of *Karafs*, (*Apium graveolens* Linn.) 30 gm each,
7. Herbs of *Ghafis* *Gentiana olivierii* Griseb. (*Agrimonia eupatoria*)
8. *Afsanteen* (*Artemisia absinthium* Linn) Rumi 15 gm each,
9. *Lak Maghsool* (*Cateria lacca*),
10. *Qasb al Zareera* (*Swertia chirata*),
11. *Qust Sheeri* (Sweet Costus root)
12. *Mur Makki* (*Commiphora myrrh*),
13. *Rewand Chini* (*Rhubarb, Rheum officianale* Baillon.) each 9 gm,
14. *Izkharr* (Rusa grass *Andropogon shoenanthus* Linn.) 12 gm

All these drugs are boiled in 1.5 liter of water till the water is reduced to its half. Dose 120 gm each day with oil of pistachio 5ml and sweet almond oil 6 ml.

Hot Poulitice or hot ointment is also helpful and tested.

Ingredients of the ointment: *Ikleel al Malik* (*Trigonella uncatata* Boiss.), *Qust* (Costus root), *Mur Makki* (*Commiphora myrrh*), *Sunbul* (*Nardostachys jatamansi*), *Acorus calamus* (*Waj Khurasani*), *Trigonella foenum-graecum* Linn. (*Hulba*), *Asafoetida* (*Hilteet*)

Another formulation: *Ushna* (*Parmelia perlata*), *Anber barees* (*Zarishk*, *Berberis*)

aristata), *Mastagi* (*Pistacia lentiscus*), *Ikleel al Malik* (*Trigonella uncata* Boiss.), *Sunbul* (*Nardostachys jatamansi*), *Sosan* root (*Iris ensata*), Dry rose, All these drugs are cooked in *Mastagi* (*Pistacia lentiscus*) oil and applied as warm poultice over the affected site in the morning and evening, it is much effective.

Another formulation for *Zamad* (Poultice): *Izkhar* (Rusa grass *Andropogon shoenantus* Linn.), *Habbul ban* (*Melia azedarach*), *Mastagi* (*Pistacia lentiscus*) each 3 parts, *Aloe barbadensis* (Sibr Saqutri), *Afsanteen* (*Artemisia absinthium* Linn) each 6 parts, *Sunbul* (*Nardostachys jatamansi*), *Saleekha* (*Cinnamomum cassia*) each 2 parts, *Ersa* (*Iris ensata*), Leaves of *Marzanjosh* (*Origanum vulgare*) each 8 parts, *Ushuq* (*Gum ammoniac*) 24 parts, *Samaghul Butum* (*Pistachia terebinthus*), *Kundur* (*Boswellia serrata* Roxb, *Olibanum*) 12 parts, Wax 630 gm, *Henna* oil (*Lawsonia inermes* Linn.) as per need

Another formulation for *Zamad* (Poultice): *Balan* seeds, *Muqil* (*Commiphora mukul*), *Lawsonia inermes* Linn. (*Henna*), *Mur Makki* (*Commiphora myrrh*), *Kundur* (*Boswellia serrata* Roxb, *Olibanum*), *Zafran* (*Crocus sativus*) each 45 gm, *Sumbul* (*Nardostachys jatamansi*) 60 gm, *Samagh al Butum* (*Pistachia terebinthus*) 180 gm, *Kundur* (*Boswellia serrata* Roxb, *Olibanum*). *Muqil* (*Commiphora mukul*) is dissolved in alcohol and added with *Zafran* (*Crocus sativus*), *Samagh Al Butum* (*Pistachia terebinthus*) is melt with oil of *Nardeen* (*Nardostachys jatamansi*), remaining drugs are powdered and mixed with alcohol and a little wax then applied as poultice.

If there is a diarrhea accompanied with the edema in hands and eye lids then *Sikanjabeen Asli* (Oxymel of honey) with *Qurs Rewand Chini* (*Rhubarb*, *Rheum officianale* Baillon.) should be given. (*Maseeh*)

Another formulation: *Safarjal* (*Cydonia vulgaris*), Barley flour, Wax, Bone marrow of cow's foreleg, Oil of *Afsanteen* (*Artemisia absinthium* Linn), Oil of rose, *Henna* (*Lawsonia inermes* Linn.), *Sunbul* (*Nardostachys jatamansi*), *Zafran* (*Crocus sativus*), *Asarun* (*Asarum europium*), *Ersa* (*Iris ensata*), *Qeranfal* (*Eugenia caryophyllata*), *Ushuq* (*Gum ammoniac*), *Mastagi* (*Pistacia lentiscus*), All these drugs are pounded and given orally and may be altered as per heat or cold.

Diets (*Aghzia*) in *Sue Mizaj Barid*: Pulp of hot fresh bread soaked in any syrup, light easily digestible meat like bird, hen etc or roasted flesh mixed with aromatic spices. *Karnab* (cauliflower) cooked with spices like *Darcheeni* (*Cinnamomum zeylanicum* Blunc.), *Filfil siah* (*Piper nigrum*), *Mastagi* (*Pistacia lentiscus*), *Kamun* etc, garnished with *Sudab* and soup made of *Hulba* (*Trigonella foenum-graecum* Linn.) and hot nuts and sometimes bitter *Hinduba* (*Chicorium intibus*) (*Cichorium*). *Halzun* meat is also useful. Beef, fish, milk and

citrus fruit should be avoided.

Suetable nature of liver is hot and moist so cold temperament is against its nature which may cause changes in its functions leading to alteration in blood substances.¹⁵

Sue Mizaj Yabis (Abnormal Dry nature of liver)

Signs:

1. Dry tongue and mouth,
2. Intense thirst, lack of appetite
3. Hard pulse and less quantity of blood and urine
4. Quick emotion and anger

Sue Mizaj Yabis causes weakness of liver, pain and ascites.

Treatment: Moistening agents from vegetables drinks and foods, cold poultices and liniments, should be taken up for curing dryness but it should not be used in abundance as it may lead to *Su al Qinya* (Anemia), *Tarahhul* (Flabbiness) and ascites.

Zamad: Baqila seeds is smashed with mucilage of *Aspghol* (aspogel) and wrapped in a cloth and applied as a poultice on liver. Barley water and whey water is also beneficial. Keeping patients in cool places and enema with cold drugs is useful.

Sue Mizaj Ratab (strange moist nature of liver)

Signs:

1. Edema of face and eyes, excess moistness in the blood
2. Lax muscles of the hypochondria,
3. Lack of thirst except in severe heat of the fluid,
4. Whiteness of color with slight yellowness but it becomes green in case of severe cold with humidity and body weakens due to loosening by humidity.

Treatment:

It is treated by exercise, reduction of diets, milk and water. Use of drugs and foods that has *Talteef* and *Tajfeef* (Drying of moisture) is beneficial but *Tajfeef* should not be in excess as it may cause *Zabul* (Emaciation).

Drugs for *Tajfeef*:

1. *Aneesun (Pimpinella anisum* Linn),
2. *Mastagi* (*Pistacia lentiscus*),
3. *Aslus Soos, Glycyrrhiza glabra* Linn, (Liquorice root, ,),
4. *Razianaj (Badian, Foeniculum vulgare)*

These are boiled with *Sikanjabeen Buzoori* and given with *Dawaul Kurkum*.

Treatment for anomalous Hot and Dry nature of the liver (*Sue Mizaj Harr Yabis*)

It causes weakness, pain, swelling and papules of the liver and hepatic diarrhea.

Useful drugs: Cold and moist poultice, ointments, foods and vegetables mainly *Hinduba* (*Chicorium intibus*), donkey's milk, barley water, *Aalo Bukhara*. Evacuation by use of *Tamarind*, *Kasus* (*Cuscuta reflexa Roxb.*) seeds, *Haleela* (*Terminalia chebula Retz.*) *Zard* and *Khiarshanbar* (*Casia fistula*) are beneficial.

Galen: if it is accompanied with constipation then *Banafsha* (*Viola odorata Linn*) powder is given with water of *Mako* (*Solanum nigrum*).

Harmful stuff: Cold and astringents foods, rice, *Kamun*, hot spices, large amount of pistachio, excess humidification as it will cause *Irkha* (relaxation), heavy meat or thick liver and spleen like of beef.

Treatment for anomalous Hot and Moist nature of the liver (*Sue Mizaj Harr Ratab*)

Supportive materials: Cooling and astringent drugs or foods or the substances having attenuating power like whey water, sugar, *Arq Mako* (water extract of *Solanum nigrum*), *Kakanj* (*Physalis alkekengi*) along with *Aloe barbadensis* (*Sibr Saqutri*,) or *Khiarshanbar* (*Casia fistula*).

Zamad: Paste made of *Habbul-Aas*, *Sandal Surkh* (Sandal red), camphor, rind of *Behi*, *Barg Zarishk* (leaf of *Berberis aristata*) is applied.

Treatment for anomalous Cold and Dry nature of the liver (*Sue Mizaj Barid Yabis*)

Useful drugs: Hot, greasy and soft poultice, ointments and hot *Majuns* like *Dawaul Lak Maghsool* (*Cateria lacca*) and *Dawaul Kurkum*. Ingredients: *Sakbeenaj* (*Ferula foetida Regel. persica*), *Ushuq* (*Gum ammoniac*), *Jaosheer* (*Ferula galbaniflua Boiss.*), *Aneesun* (*Pimpinella anisum Linn*), Seeds of *Karafs*, (*Apium graveolens Linn*). All these drugs are pounded together to make tablets.

Treatment for anomalous Cold and Moist nature of the liver (*Sue Mizaj Barid Ratab*)

Useful things: Food or a drug that is hot, attenuating and astringent is good. Any toxic matter should be expelled by strong *Maul Usul* (water extract of roots) like *Kakanj* and *Ayarji*.

Drugs for (Evacutaion) *Istifragh*. *Haleela* (*Terminalia chebula Retz.*) black, *Ghareequn* (*Agaricus campestris*), *Habbun Neel* (*Ipomoea hedracea* (Linn.)), *Habbul ghaar* (*Laurus nobilis*), *Afteemun* (*Cuscuta reflexa Roxb.*), *Turbud Safed* (*Ipoemea turpethum*), Light and easily digestible foods such as meat of small birds are preferred.

Section 10: *Sighr Al Kabid* (Atrophy of the Liver)

It is a condition in which the size of the liver decreases. Due to this condition liver is unable to perform its metabolic functions and the diet or food which reaches there from stomach remains as it is and causes pain due to distension and diarrhoea. This condition can be congenital (hepatic hypoplasia) as well as acquired. The patients suffering from this condition are diagnosed by the shortening of the fingers and thinning of the blood vessels.

There may be atrophy of liver in some persons and sometimes it is reduced to the size of the kidney. In such persons after taking full meal and reaching food to the liver after digestion in stomach, there is not enough space for assimilation; it may cause obstruction in the liver, sense of heaviness and severe pain. Retention, assimilation and excretion become defective leading to diarrhea because major part of the chyme can not be absorbed by the liver.

Symptoms:

1. Obstruction in the liver,
2. Excess flatus, heaviness even by moderate diets,
3. Indigestion, weakness due to non absorption of the food,
4. Frequent occurrence of swelling and emboli in the liver.
5. Sometimes congenital small fingers also point to small liver

If gall bladder is also small then the fluid absorbs in the blood causing white appearance.

A person whose growth and development was not up to the mark and could not digest the food despite having good meal was diagnosed by Galen with Atrophy of liver and shrinkage of the vessels and bile passage. He was treated on this line.

Management: Cure by foods that are less in quantity, high in nutrition, rapid in diffusion which should be taken with frequent interval.

Cure by drugs that act as diuretic, purgative, cleansing to liver, attenuating and deobstructing.

Hot drugs should be avoided as small liver can not tolerate it.

Formulation: *Haleela Siah* (*Terminalia chebula* Retz.), *Haleela Kabuli* (*Terminalia chebula* Retz.), *Mastagi* (*Pistacia lentiscus*), *Sunbul* (*Nardostachys jatamansi*), *Kundur* (*Boswellia serrata* Roxb, *Olibanum*), *Qeranfal* (*Eugenia caryophyllata*), *Qaqila* (*Cardamom*) small, *Dar Filfil* (*Piper longum*), All these drugs should be taken in equal amount and finely powdered.

Section 11: *Sudad Al Kabid* (Obstruction in the liver)

The obstruction of liver caused by strong Quwwat Jadhiba (absorptive faculty) and

weak *Quwwat Dafi'a* (expulsive faculty). These factors lead to the accumulation of viscous humours in the liver which in turn causes the inflammation of liver henceforth the obstruction of liver. As a result of this, patient feels heaviness at the site of liver, becomes weak and pale, breathless, urine will be colourless, stool becomes soft and colourless.

1. Obstructions sometimes occur in the substance of liver. The cause may be that the blood supplying the liver becomes thickened and expulsion power is so weak that liver is incapable to expel the waste products so it starts absorbing in the vicinity causing *Suddah*.
2. Sometimes it occurs in the vessels of the liver either due to their narrowness or they are contracted somewhere or there is curve in the vessel. Such obstructions are mostly found in the branches of portal vein because the nutritive matters first reaches here then pushed further away into narrow branches leaving heavy residual matter if any therefore the obstruction occurs mostly in the concavity of the liver and later in the convexity too due to large quantity of the matter.

When these emboli remain for a long time, they get putrefied resulting in fever swelling and eventual ascites and flatulence causing severe pain. Therefore obstruction is one of the genuine diseases which need careful attention.

3. The matter creating obstruction may be a thick, viscous humor which accumulates in large amounts or a swelling or flatus or a state of contraction. Rarely some excessive growth of a tissue or a polyp is the real cause.
4. However the actual cause of obstruction is the weak *Quwat Hazm*, *Quwat Tameez* and *Quwat Dafa* due to *Sue Mazaj Harr* or *Barid* coming from outside or inside.
5. Secondary cause may be the ingestion of thick and heavy meat, desire for eating of abnormal materials like charcoal and lime. It is not necessary that always entry of a thick and hot substance can create obstruction. A substance may be thick according to liver but after digestion in liver it becomes not so thick like well chewed wheat. Mostly the nature of body is capable to expel the matters or is assisted by therapeutics then it is excreted through stools if embolus is in concavity and through urine in case the obstruction is in convexity.

Symptoms: Congestion and heaviness are the common symptoms in all forms of obstructions Liver is not capable to assimilate the nutrients because obstruction prevents its entry into liver or *Quwat Jaziba* of liver becomes weak, it results in two things: one the portion of chyle can not be transported to other organs of the body, second the parts of chyle that gets shut up inside the liver spaces starts causing congestion and heaviness. Congestion and heaviness may arise due to swelling also and it will be more painful than *Suddah*.

Diagnosis:

1. Swelling can be diagnosed by the findings in stool and urine. Patient with obstruction may suffer with anemia and altered body colour, whiteness of stool heaviness at liver site and if the emboli is secondary to respiratory diseases then difficulty in breathing may also be present.
2. Thin and abundant stool is indicative of the *Suddah* in concavity of the liver.
3. Thin and reduced amount of urine with heaviness at liver site is indicative of the *Suddah* in convexity of the liver.
4. Pain in the margins of liver with heaviness at liver site along with fever is indicative of the *Suddah* due to swelling of the liver.
5. There will be heaviness and shifting spasm in case of *Suddah* due to flatus.

Principle of Treatment in *Sudad*

Obstruction caused by humors are treated by the drugs that have the quality to cleanse the materials and act as diuretic when required.

Purgatives are used in case the *Suddah* is in concavity of the liver and diuretics are used in case the *Suddah* is in convexity of the liver. The best method is that the drugs capable of dissolving the obstruction and purifying the liver should be given first. In case of chronic obstruction, venesection of Basilic vein or purgation is needed.

Drugs useful for *Sudad* of liver are as follows:

Arq Hinduba (Juice of *Chicorium intibus*) and Arabian camel milk are mixed and cooked with *Razianaj* (*Foeniculum vulgare*), *Matricaria chamomilla* Linn *Chamomile* (*Babuna*), *Izkhar* (*Rusa grass Andropogon shoenanthus* Linn.), *Kasus* (*Cuscuta reflexa* Roxb.), *Fumaria officinalis* (*Shahtra* (*Fumitory*, *Fumaria officinalis* Linn), *Afsanteen* (*Artemisia absinthium* Linn) and *Uqhuwan* (Daisy flower) and given to drink.

If there is no deposit in urine or sign of *Nuzj*, no potent drug should be used.

If the cause of *Suddah* is inflammation or flatus, then it should be cured by the drugs like Arabian camel milk followed by purgatives like vegetables and *Khyarshanber* then by fine diuretics that is free from heat. If the cause of *Suddah* is congenital defect or narrowness of vessels then it should be cured by the drugs written in the Section of *Sighr al-Kabid*. If the cause of *Suddah* is contraction of vessels or dryness then laxative and deobstruent drugs with milk should be used.

Suddah in concavity of liver or in mesentery: After *Nuzj*, evacuation is done by use of purgative and hot enema.

Drugs for *Nuzj*: Rind of the roots of *Razianaj*, *Badian* (*Foeniculum vulgare*) and *Kasni*, *Qurtum* (*Carthamus tinctorius*) seeds, *Mako* (*Solanum nigrum*), *Khar Khask* (*Tribulus terrestris*), *Aneesun* (*Pimpinella anisum* Linn), *Izkhar* (*Rusa grass Andropogon shoenanthus* Linn.), Root of *Karafs*, (*Apium graveolens* Linn.), *Sunbul al-Teeb*, (*Nardostachys jatamansi*), *Mavez Munaqqa*, All these drugs are made into decoction and given to drink.

Drugs for purging: *Afsanteen* (*Artemisia absinthium* Linn), *Rewand Chini* (*Rhubarb, Rheum officianale* Baillon.), *Khyarshanber*, *Turanjabeen*, (*Alhagi pseudalhagi*), All these drugs are boiled in water and given with *Sharbat Deenar* (Syrup of *Deenar*).

Compound Drugs for neutralization:

Qurs Zarishk (*Berberis aristata*), *Dawa al-Kurkum* with *Arq Afsanteen* (*Artemisia absinthium* Linn) and *Arq Shahtra* (*Fumitory, Fumaria officinalis* Linn) (*Fumaria officinalis*) To dissolve *Suddah* in concavity of liver, *Maul Usul* is best, Ingredients of *Maa al-Usuk*:

Root of *Karafs*, (*Apium graveolens* Linn), Root of *Razianaj*, *Badian* (*Foeniculum vulgare*), Root of *Sosan*, Root of *Izkhar* (*Rusa grass Andropogon shoenanthus* Linn.), *Aneesun* (*Pimpinella anisum* Linn), *Rewand Chini* (*Rhubarb, Rheum officianale* Baillon.), *Majeeth* (*Rubia cordifolia*), *Qust* (*Costus root*), Drugs 1-4 are boiled in the water and decoction is mixed with the drug 5-8 and given to drink.

Advia Mufattiha Barida (Cold and dissolving drugs):

Hinduba (*Chicorium intibus, Kasni*), *Bartang* (*Plantago major* Linn.), *Kasus* (*Cuscuta reflexa* Roxb.), *Rewand Chini* (*Rhubarb, Rheum officianale* Baillon), *Afsanteen* (*Artemisia absinthium* Linn), *Ghafis* (*Gentiana olivierii* Griseb), bitter almond, extract of *Razianaj* (*Foeniculum vulgare*), *Karafs* (*Apium graveolens* Linn.), Potent *Sikanjabeen*, If a little *Hararat* is needed: *Maul Asl* (Honey water) with *Sikanjabeen Asli*.

Motadil (Moderate drugs):

1. *Turmus* (*Lupinus albus*)
2. *Kamafitus, Kakronda* (*Blumea balsamifera* Dc.)
3. Vinegar of onion with *Sikanjabeen Unsuli*
4. *Halyun* (*Asparagus officinalis* Linn.),
5. *Beekh Sosan* (Root of *Iris ensata*),
6. *Lac Maghsool* (*Cateria lacca*)

Drugs of above class can be used.

Advia Mufattiha Harrah (Hot and dissolving drugs):

All strong diuretics like *Asarun* (*Asarun europium*), *Saleekha* (*Cinnamomum cassia*), *Fitra salion* (*Prangos pabularia*), *Zaravind mudahraj*, *Aristolochia rotunda*, *Majeeth* (*Rubia cordifolia*), *Ersa* (*Iris ensata*), *Pista*, *Ghareequn* (*Agaricus campestris*), *Afteemun* (*Cuscuta reflexa* Roxb.), *Onion*, *Joda*, *Qanturion* (*polycarpea corymbosa*), *Juntiana* (*Gentiana lutea* Linn.), *Turmus* (Lupine, *Lupinus x hybrida*), *Ficus hispida* Linn soaked in almond oil.

Following compound drugs are also beneficial:

Qurs Lac Maghsool (*Cateria lacca*), *Qurs Afsanteen* (*Artemisia absinthium* Linn), *Dawa al Kurkum*, *Amrosia*, *Majun Juntiana* (*Gentiana lutea* Linn.), *Majun Rawand*, *Majun Enjidan*, *Majun Sharyaran*, *Majun Falafili*, *Aflonia* and *Dawa al Misk*.

Ingredients of *Majun* that is much useful in dissolving *Suddah* of liver and spleen:

Ushuq (*Gum ammoniac*), *Mastagi* (*Pistacia lentiscus*), *Kundur* (*Boswellia serrata* Roxb, *Olibanum*), *Qust* (*Costus root*), *Ghafis* *Gentiana olivierii* Griseb, *Filfil* (*Piper nigrum*), *Dar Filfil* (*Piper longum*), *Sazaj Yamani*, All these drugs are pounded and kneaded with honey to make confection and to be used with *Maul Usool* or syrup used in obstruction.

Another *Majun* that is light: *Sunbul* (*Nardostachys jatamansi*) three parts and *Afsanteen* (*Artemisia absinthium* Linn) one part is taken, crushed and mixed with honey and used. Another: *Ghareequn* (*Agaricus campestris*), extract of *Ghafis* *Gentiana olivierii* Griseb. with *Sikanjabeen* is effective in *Suddah*.

Another: *Onion*, *Persiaoshan* (*Adiantum capillus veneris*), bitter almond, *Hulba* (*Trigonella foenum-graecum* Linn.), *Afsanteen* (*Artemisia absinthium* Linn), all these drugs are boiled and used with honey.

Another *Majun* that is also useful in dissolving a recently developed *Suddah* of liver:

1. *Filfil* (*Piper nigrum*),
2. *Sunbul* (*Nardostachys jatamansi*) ut *Teeb*,
3. *Trigonella foenum-graecum* Linn. (*Hulba*) ,
4. *Qust* (*Costus root*)
5. *Asarun* (*Asarun europium*)

All these drugs are pounded and kneaded with honey and used with other suitable syrup. ¹⁶

Useful syrups: *Sikanjabeen* of seeds made with sugar and *Sikanjabeen* of seeds made with honey and onion is more potent. Decoction of *Razianaj* (*Foeniculum vulgare*), *Karafs*, (*Apium graveolens* Linn), *Izkahr*, *Lac Maghsool* (*Cateria lacca*), *Majeeth*, *Trigonella foenum-graecum* Linn. (*Hulba*), *Ghafis* *Gentiana olivierii* Griseb. (*Agrimonia eupatoria*), syrup made of *Afsanteen* (*Artemisia absinthium* Linn) and infusion of *Aloe barbadensis* (*Sibr Saqutri*), *Ancesun* (*Pimpinella anisum* Linn) and bitter almond are also useful.

Useful purgatives: Strong purgatives should be avoided only mild one is used as per need. Suitable *Mushil's Ayarij Faiqra*, *Bisfaij Fustuqi* (*Polypodium vulgare* Linn.), *Ghareequn* (*Agaricus campestris*), *Afsanteen* (*Artemisia absinthium* Linn), with *Safoof Turbud Safed* (*Ipoemea turpethum*) is beneficial while with castor oil is becomes potent purgative.

Useful *Zamad* (Poultice): *Matricaria chamomilla* Linn *Chamomile* (*Babuna*), *Trigonella foenum-graecum* Linn. (*Hulba*), *Karafs*, (*Apium graveolens* Linn), *Ikleel al Malik*, *Asarun* (*Asarun europium*), *Nankhwah* (*Ajwain Desi*, *Kamun*, *Trachyspermum ammi*), *Turmus* (Lupine, *Lupinus x hybrida*), *Asafoetida* (*Hilteet*), *Ushuq* (Gum ammoniac), *Afsanteen* (*Artemisia absinthium* Linn), *Kakronda* (*Blumea balsamifera* Dc) *Mastagi* (*Pistacia lentiscus*), *Zafran* (*Crocus sativus*), All these drugs are pounded and made into paste with oil of *Nardeen* (*Nardostachys jatamansi*) and wax and applied.

Diets: Harmful diets are heavy meats of large animals, white bread made of viscous materials, alcohol, rice and sweets, *Qalaya* and *Advia Mujaffifa*.

Suitable diets are bread of fermented dough, delicate wheat, barley, *Tamar* (dates), Halyun and peas. Heavy exercise and drinking water just after meal should be avoided. *Maul Asl* (Honey water) with *Maa al Shaeer* (barley water) is most effective for *Suddah* of liver. (Razi) ¹⁷

(Contd..)