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Exploring the Therapeutic Values of Venesection (Fasd): A Review and Clinical Studies

Shaik Adeena Parveen^{1*}, Uzair Yousf Mir¹, Mohd Nayab², Abdul Azeez², Abdul Nasir Ansari³

PG Scholar¹, Department of Ilaj bit Tadbeer, NIUM, Bengaluru, Karnataka, India Associate Proferssor², Department of Ilaj bit Tadbeer, NIUM, Bengaluru, Karnataka, India Professor and Head³, Department of Ilaj bit Tadbeer, NIUM, Bengaluru, Karnataka, India **DOI:**https://doi.org/10.55248/gengpi.5.0924.2422

ABSTRACT

Unani System of Medicine is Graeco-Arabic medicine found by Hippocrates and Galen. According to Unani medicine, diseases are thought to disrupt the body's normal temperament and humor equilibrium. So treatment aims at restoring humor equilibrium and correcting aberrant temperament. In Unani system of medicine, there are three methods of treatment i.e. *Ilaj Bit Tadbeer wa Ghiza, Ilaj Bil Dawa* and *Ilaj Bil Yad*. Among these treatments, the most popular treatment method is *Ilaj bit Tadbeer*, wherein modification within six essential factors of life (*Asbabe Sitta Zarooriya*) is done with myriads of regimes with the aim of acquiring and preserving health. Regimes like *Fasd, Hijamat, Dalk* etc., are used to evacuate morbid humors from the body. *Fasd* is based on the principle of evacuation (*Istifragh*). In *Fasd*, incision is given on the blood vessels to evacuate the morbid and excessive humors from the body to treat disease or keep the person in good health. Based on classical literature, this paper discusses the specifics of venesection, including its history, mechanism of *fasd*, indications, duration of *fasd*, and scientific studies on venesection. A special emphasis is made on the application of *Fasd* in various medical and surgical diseases.

KEYWORDS - Unani, Ilaj Bit Tadbeer wa Ghiza, Fasd, Venesection.

INTRODUCTION

Unani System of Medicine is Graeco-Arabic medicine found by Hippocrates and Galen, and refined by Arabian and Persian physicians such as Rhazes (al Razi), Avicenna (Ibn-e-Sina), Al-Zahrawi, and Ibn Nafis throughout the Middle Ages. Buqrat (460-377 BC), also known as Hippocrates, was a descendant of Aesculapius and is regarded as the "Father of Unani Medicine". In Unani System of Medicine, diseases are thought to disrupt the body's normal temperament and humor equilibrium. So treatment aims at restoring humor equilibrium and correcting aberrant temperament.

In Unani system of medicine, there are three methods of treatment i.e.

- 1. Ilaj Bit Tadbeer wa Ghiza (Regimenal therapy and Dietotherapy),
- 2. Ilaj Bil Dawa (Pharmacotherapy) and
- 3. Ilaj Bil Yad (Surgery).

A popular method of treatment among these that has been used for years by Unani physicians is *Ilaj Bit Tadbeer*. In this method of treatment, *Asbabe Sitta Zarooriya* (the six essential factors of life) are modified with the intention of acquiring and preserving healthy life with myriads of regimens. Among its regimens are *Hijamat* (Cupping), *Dalk* (Massage), *Fasd*(Venesection), *Qai* (Emesis), and *Irsal-i-Alaq* (Leeching/Hirudotherapy) etc.,¹

DEFINITION

The literal meaning of Fasd is cutting or tearing of a vessel. According to Ibn-i-Habal Baghdadi, "Venesection is a process of complete evacuation in which blood and dominating humors mixed with blood are drained out from a vein". Ibn-i-Sinā wrote that Fasd is general elimination of humors which is aimed at removing excessive and morbid humors from body. Among other definitions, the author of Al-Umdah Fil-Jarahat gave the best and most satisfactory one, saying that "Fasd is a type of Tafarruq-i-Ittisāl (loss of continuity) that is done in veins intentionally by any specialised instrument aimed at removing excessive and morbid humors from body that can otherwise make body prone to infections".

HISTORY

Phlebotomy, also known as bloodletting or venesection, is an important treatment modality that has been used by generations from ancient times to the present. The Hippocratic collection, dating from the fifth century BC, contains the earliest documentation of bloodletting via vein cutting, or *fasd*. The popularity of *fasd* in Greece was reinforced by the ideas of Galen after he discovered that veins and arteries were filled with blood, not air as was commonly believed at that time. In Greece, *fasd* was in use around the time of Hippocrates.

Erasistratus proposed that plethora in the blood was the root cause of many illnesses. Archagathus, one of the first Greek physicians to practice in Rome, practised *fasd* extensively and gained a most sanguinary reputation. Blood, according to Galen, is the predominant humor that requires the greatest amount of control. A physician would either remove the patient's "excess" blood (plethora) or perform any other evacuation procedure to maintain a balance in the humors. Herodotus around 400 BC told that venesection was a common treatment for fever and apoplexy. In 100 BC, Celsus was a strong supporter of scarification, or bloodletting, as a means of relieving local conditions. William Harvey believed that venesection was a reasonable treatment for many diseases. Francoi Broussais, a well-known 17th-century Persian physician, suggested that the best course of treatment for fever is to utilize leaches in conjunction with excessive bloodlettings. John Hunter, the Father of modern surgery, in his 1794 treatise, recommends bloodletting as an effective treatment for inflammation and apoplexy. He also thought that treating smallpox with bloodletting would be beneficial. In 'The Principles and Practice of Medicine', William Osler supported bloodletting in cases of cerebral haemorrhage, emphysema, sunstroke, pneumonia, arteriosclerosis with heart failure, and systemic hypertension. Currently, bloodletting is still done, but only in a limited number of cases, such as hemochromatosis, myeloproliferative diseases, polycythemia vera, and Porphyria cutanea tarda (PCT), to prevent organ damage from iron accumulation.

MECHANISM OF FASD

Several physiological mechanisms underlie *Fasd*. For instance, bloodletting stimulates bone marrow stem cells to produce new red blood cells (RBCs), which require the movement of iron (in the ferritin form) from the body's stores to produce haemoglobin (Hb). Venesection is the recommended method since it is the most effective strategy to control the symptoms and issues of blood disorders because it removes serum iron or RBCs.¹⁰

MATERIAL AND METHODS

Unani classical literature was searched through *Kitab Al-Hawi, Al-Ikseer, Kitab Al-Mukhtarat Fit-Tibb, Al-Qanoon Fit-Tib, Khazainul Advia, TazkaraUool-al-Albab, Bayaz-e Kabeer, Firdos al Hikmat* etc., for its complete description. For clinical studies, and efficacy computerized databases such as Medline, PubMed, Google Scholar and Science Direct were searched. We have searched classical literature from classical unani books and modern literature from digital database.¹⁰

UROOQ E MAFSOODA

The vessels that are used for venesection are called *Urooq e Mafsooda* (Bloodletting vessels). In the human body, multiple vessels. i.e., veins and arteries, preferably veins are employed for *Fasd* in the management of various ailments. The procedure of venesection was commonly used by Unani physicians, but the number of veins to be venesected mentioned by Unani physicians varies from physician to physician which is mentioned in the following table. On the following table.

Unani Physician	Urooq e Mafsooda
Ibn-ul-Qaf al Maseehi	34
Ibne Hubal Baghdadi	41
Zakaria Razi	29
Zahrawi	32-Among them 16 (sixteen) are of head and ten (10) in each hand while 06 (Six) in both legs
Ali Geelani	36 including veins and arteries
Other Unani physicians	66 veins

EQUIPMENTS FOR VENESECTION

Scalpel

Gloves

Cotton

Bandage

Antiseptic lotion

Anaesthetic agent

Haemostatic/Astringent (Habissudam/ Qabiz) drugs like Sang e Jarahat (Soapstone/Hydrated Magnesium Silicate), Dammul Akhwain, (Dracaena ambet / cinnabar)

Emergency kit¹¹

INDICATIONS

- 1. Hemochromatosis
- 2. Myeloproliferative diseases
- 3. Polycythemia vera
- 4. Porphyria cutanea tarda (PCT)⁹
- 5. Rheumatism, gout, and sanguineous sciatica
- 6. Recurrence of hemoptysis
- 7. Convulsions, coma, and melancholia
- 8. Swelling of the throat and internal organs
- 9. Hot(inflammatory) type of conjunctivitis
- 10. Excessive heat or weakness in the internal organs
- 11. When an abscess threatens to burst before maturing, even in the absence of any other indications or an excess of humors
- 12. Haemorrhage: epistaxis, haemoptysis, menorrhagia, bleeding piles, and bleeding from a ruptured abscess. 12

CONTRAINDICATIONS OF FASD

- Those who are younger than 14 or older than 70 years
- Fever
- Extremely cold or hot weather
- People with amraze barida
- After meals
- Pregnancy
- In individuals who are weak, feeble and anaemic
- Obesity
- In liver weakness.¹³

POSITION

Venesection should be carried out in the supine position because it conserves strength and prevents fainting.

SIZE OF PUNCTURE

When the subject is well-developed and muscular and the purpose of venesection is prophylactic, a large, wide incision is advised. A wide incision is also better in winter time as it prevents blood from clotting. Usually, a narrow incision works best in the summer.¹²

SUITABLE TIME FOR VENESECTION

Spring is the best season for fasd, especially for persons predisposed to sanguineous diseases. If fasd is done for the prevention of disease, it should be performed in early spring and mid-autumn season. 14

DURATION OF FASD

The duration of *fasd* and the amount of blood to be expelled may be determined by a careful examination of the pulse. Even during bloodletting, the physician should keep examining the pulse and stop the bleeding when signs of weakness appear. Furthermore, if the colour or viscosity of blood alters, or if the pressure of blood flow decreases, if the pulse gets weaker then *fasd* should be stopped.¹⁵

VEINS AND THEIR INDICATIONS¹

S.NO.	TYPE OF VEIN	NAME OF VEIN	TYPE OF INCISION	INDICATIONS
2	Warid-i-Bāsaliq (Tannur-i-Badan) Warid-i-Qifāl (Saraa'ru)	Basilic vein Cephalic vein	INCISION Mutawwal Mutawwal	 Diseases of whole body Pain in hip, thigh and legs Sanguinic fever Migraine Disease of liver, spleen, lungs, pleura Diseases of head and neck Sanguinous disease of head Shaqiqa
				 Sudā'-i-Damwi Diseases of face Diseases of thorax Diseases of eyes, ear, palate, mouth teeth and lips Infection of tongue, diphtheria In epistaxis
3	Warid-i-Ibti	Axillary vein	Mutawwal	 Diseases of whole body Pain in hip, thigh and legs Sanguinic fever Migraine Disease of liver, spleen, lungs, pleura
4	Warīd-i-Akhal (Haft i' indam)	Median Cephalic vein	Mutawwal	 In reducing excessive accumulations of blood in the whole body Diseases of whole body Inflammation of upper & lower part of body Diseases of head and neck and organs lying below the neck In pneumonia, melancholia and phlegmatic headache
5	WaridHabl-uz-Zira	Brachial veins	Mutawwal,	Left side brachial vein: Diseases or

			Muarrab	spleen and heart
			Muarrab	
				 Right side brachial vein: Diseases of liver, Purifies the organ of neck and organs above it.
6	Warid-i-Usaylim	Salvatella vein/	Mutawwal	Right sided branch: liver diseases
	(Bae' khatar rag)	3 rd Dorso		Left sided branch: spleen diseases
		Metacarpal vein		Heart diseases
7	Warid-i-Sāfin	Saphenous vein	Muarrab	Menstrual disorders
	(Mahfooz rag)			Amenorrhoea due to obesity
				Diseases of uterus
				Itching of scrotum
				Itching of thigh
				• Inflammation of calf
				• Sciatica
				Varicose vein
				Renal disorder
				Renal pain
				Haemorrhoids
8	Warid-i- Irq-un-	Sciatic vein	Mutawwal	Sciatica
	Nasā			Niqris (Gout)
				Varicose Veins
				• Elephantiasis
9	Rakba	Popliteal Vein		Amenorrhoea
				uterine pain
				Pain in anus and haemorrhoids
				Visceral pain and backache
				Renal pain
				Pain in urinary bladder
				Pain in Thigh, pain of sciatica, pain in calf muscle
				Hysteria
10	Warid al-Jabha	Frontal Vein	Muarrab	Diseases of head and face like Sudā'(headache), Shaqiqa (migraine)
				Ātshak (Syphllis) boils and wounds of face
				Ocular pain
				Heaviness in eye
11	Irq Al-Yāfukh	Parietal vein	Muarrab	Shaqiqa
				Old small eruption of head
				•

				Quruḥ and Buthur of scalp
				chronic morbid ulcer in scalp and Sa'fa
				Conjunctivitis, corneal opacity, itching of eyelid
12	IrqTaht-Al	Inferior Occipital		Chronic headaches, vertigo
	Khushsha	vein		Pain in forehead
13	Warid-i- Khalf Al Uzun	Parotid Vein	Muarrab	Diverts the Bukhārāt which ascends towards head
				• Cataract
				Small eruptions of scalp, boils and wounds of head
				Wounds of ear
				Shaqiqa
				• Sa'fa
				Nazla-i-Muzmina
14	Warid-i-Sudghi	Temporal vein	Muarrab	Diverts the morbid matter of eyes
				Shaqiqa
				Chronic headache
				Diseases of eyes
				Conjunctivitis
15	Warid-i-Arnabah	Inferior Nasal	Muarrab	Eruptions of nose
		/AlarVein		Irritation in the nose
				Erythema produced in nose
				Bawasir Al-Anf
				Carcinoma of nose
				Kalaf (Melasma)
				Sa'fa, severe headache
				High fever
				Warm-i-Litha (gingivitis), bad smell of mouth
				Pain in eye
				Irritation of eye Stye
16	Warid-i-	Nasal vein		Warm of nose
	Mankharain			Chronic head ache
				Chronic pain in eye
				Ocular congestion
17	Warid That-Al	Sub Lingual vein	Mutawwal	Diseases of oral cavity
	Lisan			 Khunāq
				heaviness in tongue
				<u> </u>

18	Warid-i-Wadajayn	Jugular Vein	Mutawwal	 Waram-i- Lawzatayn (Tonsilitis) Disease of ovule Nāsur of inner canthus of eye chronic Zabha In diseases of skin: urticaria, Dā'ul-Hayya, Dā'us-Tha'lab Bahaq Aswad, QubaRaddi, bad and corrosive wound, initial stage of leprosy Respiratory diseases like Khunāq (diphtheria) Diq al Nafas (Asthma) Hoarseness Chronic head ache
19	Irq Al-Māq	Vein of Lacrimal gland	Muarrab	 In diseases of eye: Pterygium Nasur of eye Night blindness Vascular keratitis Chronic irritation of eye Ramad Muzmin Heaviness of eye Headache Shaqiqa (Migraine)
20	Chahār Rag	Supra & Infra Labial veins	Muarrab	 Diseases of oral cavity and gums like Qulā 'Al-Fam (stomatitis) Suppurative gingivitis wound of oral cavity and gums pain of gums Bawāseer of gums
21	Warid Al-Anfaqa	Inferior Labial Vein	Muarrab	Bad smell of mouth
22	Warid-i-Shikam	Abdominal veins		 Right sided vein: in pain of liver Left sided vein: in pain of spleen
23	Warid-i-Labbah	Anterior Jugular Vein		Diseases of stomach especially diseases of cardiac end of stomach

COMPLICATIONS

- 1. A blunt lancet may fail to cut the vessel and cause unnecessary pain and swelling.
- 2. Sometimes the tip of the lancet gets broken and is left behind in the vessel where it causes some other damage.

- 3. Constipation
- 4. Heavy quantum due to venesection weakens the faculties and increases the morbid matter in the system.
- 5. Fainting
- 6. It produces agitation and disturbance of the humors.
- 7. Haematoma
- 8. Infections like cellulitis and phlebitis
- 9. Petechiae
- 10. Air embolism
- 11. Pulmonary thrombosis.¹²

SCIENTIFIC STUDIES ON THERAPEUTIC VENESECTION/ PHLEBOTOMY

1) Safety and Efficacy of Fasd (Blood Letting through Venesection) in the Cases of Osteoarthrosis - A Randomized Controlled Study

This study was designed to explore the efficacy of traditional Unani intervention Fasd (Venesection) for Osteoarthrosis. A total of 40 cases of OA were randomly divided into control and test groups of 20 each. The control group was given Unani herbal drugs while the test group was provided the same Unani treatment along with Fasd for six weeks. The safety and efficacy measurements were performed at baseline and at the last follow-up. The intervention of Fasd exhibited statistically significant results in comparison to the control group in subsidence of pain, and restriction of joint movement without causing any adverse reaction.¹⁶

2) Effect of Fasd (Venesection) in the management of Acute Cases of Irgunnasa (Sciatica): A Case Series Study

Three cases were selected for the evaluation of the effect of *fasd* in the management of the acute symptoms of *Irqunnasa*. *Fasd* was carried out at the saphenous vein around the medial malleolus of affected limb on the 1st day and 5th day for one week only. Objective parameters were Visual Analog Scale (VAS), Oswestry Disability Index (ODI) and Straight Leg Raising Test (SLRT). On the first day, the treatment was started with *fasd*, performed in short saphenous vein. Assessment of the patient was then done on the 2nd day of treatment on objective parameters. *Fasd* was done again on the 5th day and assessment was done on the 6th day. Pre and post-treatment values viz. day 1st and day 6th values of the treatment were analyzed statistically to evaluate the efficacy of the treatment. The study proved that *Fasd* is a useful therapy for the symptomatic relief and disability in patients of *Irqunnasa* without any apparent adverse effect(s).¹⁷

3) The effect of phlebotomy (Fasd) on Carpal tunnel syndrome: A randomized clinical trial

This is a randomized clinical trial. For this analysis, an entire of 70 hands with CTS were studied, aged 20-60, and of every gender. The participants were divided into 2 groups: Control and Intervention. Within the control group, 35 were treated with a routine night splint for 3 months, and 35 patients in the intervention group received *Fasd* (Phlebotomy) of Osailem vein in addition to the routine night splint. Outcome measures were evaluated by the VAS Scale, Boston questionnaire, and the diagnostic NCV test. The results showed that the incorporation of phlebotomy treatment in an exceedingly routine therapy program would reduce the pain and symptom severity, improve the functional status of patients, and distal sensory and motor disturbance of the median nerve. Therefore, it is advised that phlebotomy, as a convenient and low-cost complementary medicine technique could be employed in the treatment of CTS.¹⁸

4) A Case Report of Treating Femur Head Necrosis Applying Persian-Medicine

The case was a 46-year-old man who had felt severe pain in the left side of his hip for a month. The pain had gradually increased, and after magnetic resonance imaging (MRI), it was diagnosed that he was suffering from AVN. He was recommended to undergo surgery to change the femur head. According to some Persian Medicine sources, it was diagnosed that the case suffered a disorder of blood flow and the concentration of abnormal black bile (abnormal Sauda) in the hip area and the head of the femur. The patient was administered 14 massage sessions every other day, "Mundij- e-Sauda", Sikanjabin-e-Bazoori/Bazoori oxymel and "Mushil" (Laxative drug). The phlebotomy of the left basilic vein (fasd) and the right basilic vein was done after 2 and 4 weeks, respectively. The case's pain entirely disappeared after the second phlebotomy. Two months later, MRI and bone scan were again done, and it was reported that femur necrosis was repaired. After 2 years, the patient has no problems and is now living a healthy life. It could be concluded that to consider the capacity of Persian Medicine in treating the disease, along with modern medicine.¹⁹

5) Siravedha (Venesection therapy)in the management of Burning Feet Syndrome-A Single Case Study

A 38-year-old male patient presented with complaints of severe burning and sweating in the left foot for 9 months. The patient was treated in the outdoor department with two successive sittings of Siravedha (venesection therapy) each at the interval of 7 days. Then follow-up was taken after 10 months for reoccurrence. After the treatment, the symptoms of burning and sweating were completely relieved.²⁰

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