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Review Article

## A review of Tuberculosis (*SIL*) with special reference to Unani medicine

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### ABSTRACT

Tuberculosis (TB) is an airborne infectious disease commonly affects the lungs. TB is a major global health problem which causes ill-health among millions of people each year. The disease is caused by infection via the lung with Mycobacterium tuberculosis. In Unani System of Medicine, tuberculosis is better known by the name of *Diq* or *Sil*. Both the terms are considered synonyms. *Sil* being emaciation and *Diq* the low grade fever (*Humma-e-Diq*). *Diq* develops when the abnormal heat (*Hararate ghariba*) destroys the normal body fluids (*Rutoobat-e-tabayee*) of human body resulting in Hot & Dry (*Har yabis*) vital organs. This paper reviews the concept of tuberculosis, its etiology and management, described by ancient Unani scholars in detail.

**Keywords:** Tuberculosis, *Sil*, *Diq*, *Hararate ghariba*, *Rutoobate tabayee*

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### Introduction

**Tuberculosis (TB)** is an infectious disease usually caused by Mycobacterium tuberculosis bacteria. Tuberculosis may infect any part of the body, but most commonly occurs in the Lungs called Pulmonary TB. Extra pulmonary TB occurs when tuberculosis develops outside of the lungs, although extra pulmonary TB may coexist with pulmonary TB.<sup>1</sup>

The disease disproportionately affects the poorest persons in both high-income and developing countries. However, recent advances in diagnostics, drugs, and vaccines and enhanced implementation of existing interventions have increased the prospects for improved clinical care and global tuberculosis control.<sup>2</sup>

TB is the ninth leading cause of death worldwide and the leading cause from a single infectious agent, ranking above HIV/AIDS. In 2016, there were an estimated 1.3 million TB deaths among HIV negative people and an additional 374 000 deaths among HIV-positive people. An estimated 10.4 million people fell ill with TB. Incidence of the disease is persistently high in India, despite the efforts of the Revised National Tuberculosis Control Program (RNTCP). India accounted for 25% of cases. India also accounts for 1 of the 3 million 'missing' cases-patients with TB who are either not diagnosed or not notified. Drug-resistant TB is another persistent threat, with 490 000 cases of multidrug-resistant

TB (MDR-TB) emerging in 2016. The countries with the largest numbers of MDR/RR-TB cases (47% of the global total) were China, India and the Russian Federation.<sup>3,4</sup> In addition to this human cost, makes tuberculosis a major socio-economic burden. In this background, World Health Organization in 1993 declared tuberculosis a global emergency<sup>5</sup>.

The ancient Unani literature has numerous references on pulmonary tuberculosis. Since the time of Hippocrates (460 B C) the occurrence of the disease is characterized by fever, wasting, cough and expectoration. The ancient Unani scholars termed the tuberculosis as *Sil* and *Diq*, both the terms are considered synonyms, *Sil* being emaciation and *Diq* the low-grade fever (the cardinal symptoms of the disease).<sup>5</sup> *Sil* and *Diq* are in fact two names of the same disease. Hippocrates (460 BC), the father of medicine also believed these names as synonymous<sup>6</sup>. *Sil* means thinness, which results due to steady melting down of organs and consequently the whole body, *Diq* is *Huma* (fever) and stays in the body so much so that the fluids of the body get destroyed by its heat.<sup>7,8,9</sup>

Allama Qarshi has defined *Sil* as a sum of the lung ulcer and fever. *Tadarrun*, another name for *Sil* or *Diq* also is a synonym.

### Etiology:

According to Ibne Zohar, tuberculosis establishes when body become very thin, weak and body fluid dry up. Usually *Diq* develops when vital organs (*Azae aslia*) become hot & dry (*Har yabis*). According to Ismail Jurjani, *Diq* is a fever caused by abnormal heat (*Hararate ghariba*), when this heat is associated with vital organs, especially heart then it dissolves the normal body fluids (*Rutoobate tabayee*) of the human body which results in *Diq*.

Renowned Unani scholar Razi described that *Diq* occurs due to pleurisy, pneumonia and inflammation of diaphragm and lungs.

Unani physicians have also divided the causes of *Sil* into preceding causes (*Asbab Sabiqah*) and extrinsic causes (*Asbab Badiya*). Preceding causes are infectious fevers (*Huma-e-uffunia*), Compound fever (*Huma-e-murakkaba*), Day fever (*Huma-e-youm*), Pneumonia (*Zatur-riyah*), Pleurisy (*Zatuljnab*). Extrinsic causes includes anxiety (-----), malnutrition (*Naqs Taghzia*), and hot and dry temperament (*Haar Yabis Mizaj*). They have also given emphasis on predisposing factors such as, chronic diseases and environmental factors like congested areas, crowded places and lack of fresh air. It has also been believed that whenever changes occurs either in air or in water and get contaminated they cause sepsis of humors (*Uffonat-e-akhlaat*) and thus causing the disease.

Ahmad Bin Muhammad Tabri Some scholar has also mentioned the following disorders under the head of susceptibility, which can lead to *Sil*, if not managed properly:

1. Derangement of temperament with morbid matter (*Sue-e-mizaj Maddi*).
2. Disease of the kidneys (*Amraz-e-Kulliya*)
3. Ulcers of urinary bladder (*Busoor-e-Msana*)
4. Diabetes mellitus (*Ziabetes*)

Unani physicians have also described the infection (*Tadiya*) and epidemic (*Waba*) in their texts. *Sil* has been considered as an infectious and communicable disease. Earlier Unani physicians had a concept about the infectious nature of the disease, *Sil*, the causing microorganisms (*Ajsame Khabitha*) and specific type of Material (*Madda*).<sup>15,16,17,18</sup>

### Pathophysiology:

In this disease abnormal heat (*Harart-e-Ghair Tabayee*) remains in the body to such an extent that the body fluids are dried up. The Unani physicians have divided body into three parts: Organs (*Aza*), Humours (*Akhlat*) and Pneuma (*Arwah*) and opines that abnormal heat (*Hararat-e-Ghair Tabayee*) gets seated into the organs and may dried up all the body fluids especially of vital organs (*Aaza-e-Aslia*) in this disease. This abnormal heat also produces a kind of fever called as *Huma-e-diq* (tubercular fever).

According to Unani System of medicine, the grading of tuberculosis depends upon dissolving of body fluids (*Tahallul Rutoobate badania*).

Majoosi described that there are three grade of *Diq* i.e.

1. *Diq Mutlaq*: When the fluids of capillaries become dry due to abnormal heat then this condition is called *Diq Mutlaq*. This is the first grade of *Diq*.
2. *Zabool/ Sil*: When the abnormal heat destroys the fluids of soft organs connected to vital organs then this is known as *zabool*.

3. *Mufattit*: If the fluids of vital organs are dried by abnormal heat then this condition is known as *Mufattit*.

According to Ibn Sina, *Diq* is divided into three grades:

**First grade:** When abnormal heat (*Hararat Ghariba*) dries the fluid inside the vital organs (*Rutoobaate Talliya*) especially fluids of heart (*Qalb*) also known as *Diq Mutlaq*.

**Second grade:** When the abnormal heat (*Hararat Ghariba*) destroys the fluid near to incorporate or going to form an organ (*rutoobaat Qareeb ba Iniqaad*) known as *Zabool*

**Third grade:** If the abnormal heat (*Hararat Ghariba*) destroys fluid present in the organs since birth (*Rutoobaate manviya*) then it is the 3<sup>rd</sup> grade of *Diq* i.e. *Mufattit*.<sup>14,17,19</sup>

### Clinical Feature:

Sing in First Stage:

- Look-discolored
- Low grade and continuous fever.

Sings in Second and Third Stage:

- Facial cyanosis, Sleep and sunken eyes, stretched forehead skin, weak & Hard (*Zaeef and Sulb*) Pulse, oily urine, continuous and low grade fever elevated after meal, Hair falling and Diarrhea.

In addition to this, *Razi* and *Ibn Sina* has mentioned following sign in second Stage:

- Look- like the state of coma (*Subat*), oily Stool, Voice-weak, Bones-prominent, Nails-clubbed and folded, Blood volume-low, skin over stomach becomes thin.
- Pulsus Myurus (*Nabz Zanbulfar*) changes into Pulsus Mesalius (*Nabz Misalli*)<sup>14,20,21</sup>

### Diagnosis:

According to Unani Concept, diagnosis of the disease is made with the help of following points.

- Physical signs (*Jismani Nishaniyan*) include dusty look, facial cyanosis, sleepy and sunken eyes, hanging ear lobes, forehead skin stretched and hard vessels are found.
- Pulse (*Nabz*) becomes Hard weak (*Zaeef*), Fast (*Saree*) and Continuous (*Mutawatir*).
- Urine (*Baul*) becomes oily due to wasting of body fats.
- Temperature pattern (*Trz-e-Hrarat*): Heat is ignited in the body after meal as pouring water on quick lime. *Razi* advocated that one of the method of diagnosis is to feed the patient at different times, if patient develops fever after each meal then it is confirm sign of *Diq*.

The most prominent physician *Ibn Sina* and *Ibn Rushd*, stated that temperature of tubercular person (*Madqooq*) remains constant and does not vary but on taking meal, temperature elevates and pulse becomes *Pulsus Fortis* and *Magnus* (*Qawee and Azeem*)

*Ibn Hubal Baghdadi* has advocated temperature elevation after meal as pathognomic sign.<sup>7,22,23,24</sup>

### Management of Tuberculosis:

Management of the disease includes following Unani therapies:

1. Dieto-therapy (Ilaj Bil Ghiza)
2. Regimental therapy (Ilaj Bil Tadbeer)

### 3. Pharmacotherapy (Ilaj Bil Dwaa)

#### Dieto-Therapy (Ilaj Bil Ghiza):

Unani physicians have emphasized on the improvement of the resistance of the patient to combat successfully the disease. For this reason they have given more stress on nutritious diet especially protein rich diet. Most of the Unani physicians advised for:

- Donkey's milk (as it supposedly cleans the ulcer rehydrates body and increases the body resistance to combat the disease) goat's milk and meat of birds, fish and chicken.
- Cold and moist vegetables like Khurfa (*Portulaca oleracea*), Khubbazi (*Malva sylvestris*), Kahu leaves (*Lactuca sativa*), Kaddu (*Cucurbita moschata*), Kheera (*Cucumis sativus*), as these things also rehydrates the body.
- Honey (*Aasal*) and Honey water (*Maaul Aasal*) have been recommended to clean the lung ulcers (*Jaali*) purulent expectoration.
- Razi advises fish, bird's flesh, barley water (*Maaul Shaer*) and rose water (*Aerq-e-gulab*).
- Majoosi also recommends chicken and teehu meat, Moong *dal* in the form of asfaidbaj (a form of soup).
- Ibn-e-Sina favours fat free soft meat, fish and pulses.
- Azam stresses the use of Sarisham mahi (Isinglass).
- Care is taken to give plenty of fluids keep body cool compensate deficiencies and strengthen the vital body organs.

According to different stages of disease the diet should include:

**First Stage:** In this stage barley water (*Maaul Shaer*), fish kebab and other vegetables like Khurfa (*Portulaca oleracea*), Kanocha (*Phyllanthus maderaspatensis*), Kadu (*Cucurbita moschata*) should be given.

**Second Stage:** In the second stage the above mentioned diet should include donkey's milk, goat's milk and meat stock (*Maaul leham*), etc.

**Third Stage:** If the disease progresses into third stage the patient is emaciated and is extremely weak then easily digestible diet should be given e.g soup of bird meat, chicken soup, etc. <sup>7,14,15,20,24,25</sup>

#### Regimental therapy (Ilaj Bil Tadbeer):

Following are the non-pharmaco therapeutic methods mentioned by Unani scholars:

- **Venesection (*fasad*)** of head and face is recommended for physically strong patients.
- **Purgative (*Mushil*)** of Amaltas (*Cassia fistula*) with Turangbeen (*Fraxinus oranus*) is recommended. Decoction of Unnab (*Zizyphus sativus*), Sapistan (*Cordia latifolia*), Maveez munaqa (*Vitis vinefera*) and banafshan (*Viola odorata*) may be administered thereafter.
- **Cupping (*Hijama*)**: Some has even recommended cupping (*Hijama*) in case venesection is contraindicated.
- **Massage (*Dalak*)**: Rose oil and khari oil massage (*Dalak*) on chest are recommended. Pumpkin oil, opium

oil, neelofer oil (*Nymphaea lotus*), banafsha oil (*Viola odorata*) for body massage followed by bath.

- **Liniment (*Tila*)** Application of cold Tila on chest like sandal (*santalum album*), *Gulab* (*Rosa demascena*), *Khurfa* (*Portulaca oleracea*), *Aab Dhania Sabz* (*Coriandrum sativum*).
- **Turkish Bath (*Hammam*)**: Razi advises bath with lukewarm water (*Hammam-e-Moatadil Ratab*) before and after meals while Ibn sena recommends it before meals. Majoosi has advised for oil massage after the bath.
- **Sitz Bath (*Aabzan*)** is recommended with lukewarm water followed by application of Roghan Banafsha (*Viola odorata*). <sup>8,15,17,21,22,24,25</sup>
- Dry air is also useful in healing of ulcers. Patients are advised to live in dry and properly ventilated environment.

#### Pharmacotherapy (Ilaj Bil Dwaa):

While treating a Sil patient Unani physicians have given stress on mucolytic, desiccants and healing agents.

#### Mamoolat-e-matab (Clinical Prescriptions)

- In the morning, *Dawai-Diq* 05gm is given along with goat milk.
- In the evening *Qurs Tabasheer* (*Bambusa arundinacea*) 01 in Number is given followed by *Gilo Sabz* (*Tinospora cordifolia*), *Aslussoos* (*Glycyrrhiza glabra*), *Tukhm Khayyarain* (*Cucumis sativus*) (3 gm each) in 60 ml *Arq Hara Bhara* (Pharmacopoeal preparations) and 60 ml *Arq Sheer* mixed with 20 ml *Sharbat-e-Neelofar* (*Nymphaea alba*). Donkey milk, goat milk and *Kaddu* (*Citrus vulgaris*) water is given in the dose of 70 ml for first three days, increasing 10 ml each day till it reaches 210 ml, and thereafter 10 ml is decreased each day till it reaches again to 70 ml.
- If too much weakness is present than along with above mentioned prescription compounds of iron like *Qurs kushta khubsulhadid* 01 in Number after meal or compounds of gold like *Maul Zahab* 05 drops should be given and *Loab-Behidana* (*Cydonia oblonga*) (3 in Numbers), *Sheera Maghz Tukhm Kadu* (seeds of *Cucurbita moschata*) (3 in Numbers), *Sheera Magz Tukhm Tarbooz* (seeds of *Citrus vulgaris*) (3 in Numbers), *Sheera Tukhm Khurfa* (seeds of *Portulaca oleracea*) (3 in Numbers) are given along with *Sharbat-e-Neelofar* (*Nymphaea alba*) (20 ml).
- *Qurs-e-Tabasheer* (*Bambusa arundinacea*) and *Qurs-e-Kafoor* (*Cinnamomum camphora*) (Pharmacopoeal preparations) may also be given. <sup>7,14, 24, 25, 26</sup>

Following prescription is also beneficial to control the Cough, haemoptysis and healing of ulcer in the treatment of tuberculosis:

Gond Kateera (*sterculia urenus*), Rubbus Soos (*Glycyrrhiza glabra*), Shagr Tighal (Tigril's cocoon), Kahrubai Shamai (*Ambreskenum*) { 10 gm each } fine powder of these drugs mixed with 10 gm Khameera khshkhash (*Papaver somniferum*) and give it to the patient after that

Behdana (*cydonia oblonga*) (30gm), unnab (*zizyphus sativa*) (5 in No), Sipistan (*Cordia latifolia*) (11 in No), Mako Khushk (*Solanum nigrum*) & Gul-e-Nilofar (*Nymphaea lotus*) 60 gm each boiled in *Arq Makoh* (Distillate of *Solanum nigrum*) And *Arq Gaozbaan* (Distillate of *Borage officinalis*) 250ml and

mixed with sheera-e-anjbar (syrup of polygonum bistorta), 50 gram seeds of Black khurfa (*Postulaca deracea*) and 50 gram seeds of kahu (*Lactuca sativa*) in 90 ml Arq-e-Bartang (Distillate of *Plantago lanceolata*) with 20 ml sharbat-e-Banafsha (*Viola odorata*) and 60 gm Khaksi (*Sismbrium irio*) sprinkled over it<sup>27</sup>.

Apart from this Unani physicians have given stress on usage of crab and barley for therapeutic purpose, as they are considered very effective in tuberculosis and most of the physicians have mentioned its usage in tuberculosis.<sup>17,21,22</sup>

## Conclusion

Ancient Unani scholars were well aware with the in-depth knowledge and the infectious nature of the disease, *Sil*, so by adopting steps of management mentioned by them, along with modern medical treatment the standard of living can be improved amongst the tubercular patients as well.

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