

**INTESTINAL TUBERCULOSIS (SIL-E-AMA): AN OVERVIEW OF ITS ETIOLOGY,
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ABSTRACT

Intestinal tuberculosis (ITB), also referred to as *Sil-e-Ama*, is an important form of gastrointestinal tuberculosis that predominantly affects the ileocecal region and may present with nonspecific gastrointestinal manifestations. Delayed diagnosis is common because its clinical and radiological features can closely mimic other intestinal disorders, particularly Crohn's disease and gastrointestinal malignancy. The present review aims to provide an overview of the etiology, pathophysiology, clinical manifestations, complications, diagnosis, and management of intestinal tuberculosis, with particular emphasis on the perspective of the Unani system of medicine. Tuberculous involvement of the intestine may occur through hematogenous dissemination, swallowing of infected sputum, ingestion of contaminated food or milk, or contiguous spread from adjacent structures. The ileocecal region is the most frequently affected site, with ulcerative, hypertrophic, ulcerohypertrophic, and fibrotic forms described. Common manifestations include abdominal pain, fever, anorexia, weight loss, altered bowel habits, nausea, vomiting, and abdominal distension. Intestinal obstruction is the most frequent complication, while perforation, gastrointestinal bleeding, fistula formation, and malabsorption may also occur. Diagnosis relies on clinical assessment, imaging, endoscopy, histopathology, microbiological investigations, and molecular methods when available. In Unani medicine, tuberculosis is traditionally discussed under *Dā'al-Sil*, a chronic wasting disorder associated with derangement of *Mizāj*, weakness of organs, humoral disturbances, and depletion of nutritive and vital functions. Management emphasizes *Islāh-i-Mizāj* (correction of temperament), *Taqwiyat-i-A'ḍā* (strengthening of affected organs), *Taqwiyat-i-Badan* (general strengthening), appropriate nutrition (*Ilāj bi'l-Ghidhā*), and individualized use of Unani medicines. Several traditionally used drugs, including *Asl-us-Sūs*, *Unnab*, *Sapistān*, *Behīdāna*, *Tukhm-e-Khatmi*, *Asgand*, *Mastagi*, *Amla*, and *Bael*, are described in the manuscript for gastrointestinal irritation, weakness, wasting, and supportive care. The review highlights the potential relevance of traditional Unani concepts and supportive therapeutic approaches while recognizing the importance of appropriate modern diagnostic evaluation and treatment of tuberculosis.

KEYWORDS: Intestinal tuberculosis; *Sil-e-Ama*; *Dā'al-Sil*; Unani medicine; Ileocecal tuberculosis; Gastrointestinal tuberculosis; *Islāh-i-Mizāj*; Unani drugs.**I. INTRODUCTION INTESTINAL
TUBERCULOSIS (SIL-E-AMA)**

Recent reports suggest that intestinal tuberculosis (TB) is still a rare disease in the United States and is of concern only in immigrants to the US or in Third World countries. However, the reports do not reflect the growing incidence of TB in this country that has been noted over the past 15 years, especially in urban areas.^[1]

^{2]} The reason for this resurgence is, in part, due to the acquired immunodeficiency syndrome (AIDS) epidemic.

It is important that physicians have a heightened awareness of TB as a potential source of abdominal symptomatology. Because intestinal TB can be difficult to diagnose, the frequency of timely diagnoses will be low and patient morbidity high without a high index of suspicion. The purpose of this article is to increase awareness of this problem by reviewing the history, epidemiology, pathophysiology, diagnosis and treatment of intestinal TB.

TB is an ancient disease. Signs of skeletal TB (Pott disease) have been found in remains from Europe from Neolithic times (8000 BCE), ancient Egypt (1000 BCE), and the pre-Columbian New World. TB was recognized as a contagious disease by the time of Hippocrates (400 BCE) when it was termed "phthisis" (Greek from *phthinein*, to waste away). In English, pulmonary TB was long known by the term "consumption." The discovery of a stethoscope by Laennec in 1816 and x-rays in 1895 is credited to tuberculosis. Laennec's stethoscope was created to decrease the physical distance between physicians and patients to reduce the risk of transmission rather than amplifying sounds. His nephew, Mériadec Laennec, is said to have diagnosed tuberculosis in Laennec using Laennec's stethoscope. The worldwide incidence of TB increased with population density and urban development, so by the Industrial Revolution in Europe (1750), it was responsible for more than 25% of adult deaths. In the early 20th century, TB was the leading cause of death in the United States; during this period, however, the incidence of TB began to decline because of various factors, including the use of basic infection-control practices.

II. History and Epidemiology Intestinal Tuberculosis (Sil-e-Ama)

Intestinal TB was common early in the 20th century. It was responsible for most cases of small intestinal obstruction and stricture. However, by the middle of the century, all forms of TB had declined dramatically in the United States. This decline was caused by.

- 1) An increased standard of living,
- 2) Pasteurization of milk,
- 3) Control of bovine tuberculosis through slaughter of reactive animals, and
- 4) The introduction of antituberculous chemotherapy in the 1950s.

Frequencies in the US dropped to such low levels in the 1960s and 1970s that TB was classified as a "rare" or Third World disease. This misconception persists. Unfortunately, poverty, substandard and overcrowded housing, homeless-ness, drug abuse, and inadequate access to health care have recreated the 19th century conditions for the White Plague of tuberculosis to flourish.^[3,4] Case reports also have increased dramatically in other high risk groups, such as immunosuppressed populations^[5], incarcerated individuals^[6-9], and nursing home patients.^[10] Multidrug-resistant tuberculosis and AIDS have significantly contributed to an urban TB epidemic.^[3,5] In 1979, there were 1530 new cases of TB in New York, and by 1991 the city had 3673 new cases of TB, a yearly increase that is three times the national average. The number of reported cases continued to increase and peaked in 1992. Because of aggressive pro-grams initiated at federal, state, and local levels, the numbers of reported cases are slowly trending downward again. However, as of 1997 we are only now back to 1987 numbers.^[11]

Along with the increased incidence of TB cases, extra pulmonary TB has also increased in incidence. In 1964, only 8% of patients with TB had extra pulmonary manifestations.^[12] By 1986, this number had tripled and is even higher in the AIDS population (2). Over a 3-yr period from 1981–1984, Hulnick *et al.*^[13] found only 27 cases of abdominal TB collected from six hospitals in New York City. By 1990, over a period of only 18 months, Rosengart and Coppa (1) reported 21 patients at only one New York hospital.

III. Pathophysiology Intestinal Tuberculosis (Sil-e-Ama)

The pathophysiology of tuberculosis enteritis has been attributed to four mechanisms.

- Hematogenous spread from active pulmonary TB;
- Swallowing of infected sputum in patients with active pulmonary Tb;
- Ingestion of contaminated milk or food, which is rare in the united states; and
- Contiguous spread from adjacent organs.

After the tubercle bacillus enters the gastrointestinal tract, it traverses the mucosa to lodge in the sub-mucosa. There, the presence of the bacillus induces inflammatory changes, including serosal and sub-mucosal edema, cellular infiltration, and lymphatic hyperplasia. Eventually, the appearance of granulomata causes small papillary mucosal elevations.^[14] Lymphangitis, endarteritis, and fibrosis ensue, which lead to mucosal ulceration, caseating necrosis, and narrowing of the intestinal lumen.^[15]

In general, abdominal TB can be classified by its area of involvement. In a review (16) of 596 patients with abdominal TB, the highest incidence of disease was noted in the gastrointestinal tract and in the peritoneum, followed by the mesenteric lymph nodes (Table I). Within the gastrointestinal tract, the ileocecal area is the most common site of involvement. In fact, disease in the jejunioileum and ileocecal areas together comprise >75% of cases, with disease in the colon found in 12% of cases.^[12, 17-20] The predilection of the bacillus for the ileocecum is attributed to three factors: 1) relative physiologic stasis of the area; 2) the high rate of absorption with more complete digestion; and 3) the abundance of lymphoid tissue in the ileocecal region.^[21-22]

Tubercular intestinal lesions are grossly classified as:

- Ulcerative, most commonly seen in the small intestine.
- Hypertrophic;
- Ulcerohypertrophic, most commonly seen in the ileocecal region; and
- Fibrotic stricture.^[23-26]

Multiple sites of involvement are common and associated peritoneal tubercles and ascites are often present. Segmental ulceration with colitis is the typical presentation. Less com-mon are inflammatory strictures and hypertrophic lesions, which resemble polyps and

masses.^[27-32] Adjacent tuberculosis adenitis can cause colonic traction diverticula with narrowing, local fixation, and sinus tract development.^[31,33] Other characteristics of tuberculosis intestinal lesions include increased mesenteric fat and mesenteric adenopathy with caseation, which grossly resemble Crohn's disease. Rarely, colonic TB can present as diffuse tuberculosis colitis. Diffuse tuberculous colitis must be differentiated from ulcerative colitis and Crohn's disease, because steroid treatment can be lifesaving in inflammatory bowel disease and lethal in intestinal TB.^[34-36]

IV. Tuberculosis in Unani System of Medicine

In the Unani system of medicine, tuberculosis is traditionally discussed under the concept of *Dā'al-Sil* particularly when referring to pulmonary tuberculosis. The term *Sil* broadly denotes a wasting or consumptive disease characterized by progressive weakness and loss of body tissues. Classical Unani physicians described the condition in relation to disturbances of the *mizāj* (temperament), weakness of organs, and abnormal humoral states.

According to Unani principles, *Dā'al-Sil* is a chronic wasting disorder associated predominantly with the

respiratory system and characterized by persistent cough, fever, weakness, loss of body weight, anorexia and progressive emaciation. Classical descriptions emphasize the gradual depletion of the body's vital strength and nutritive functions.

The disease has been described in relation to.

- *Sū'-i-mizāj* (derangement of temperament) particularly abnormalities affecting the lungs.
- Weakness of the lung and other vital organs.
- Accumulation or alteration of morbid humours (*Akhlāt*).
- Poor nutrition and inadequate restorative capacity of the body.
- Environmental and lifestyle factors, including unhealthy air and poor living conditions.
- Chronic illness and excessive physical or mental exertion, which may contribute to loss of bodily strength.

Feature	Unani description
Cough	Chronic, persistent cough, sometimes associated with sputum
Fever	Low-grade or intermittent fever
Weight loss	Progressive loss of flesh and body mass
Weakness	Marked general weakness and reduced physical strength
Anorexia	Reduced appetite
Night sweating	Excessive sweating, particularly at night
Chest symptoms	Chest discomfort or pain and respiratory difficulty
Haemoptysis	Blood-stained sputum may occur in advanced disease
Emaciation	Progressive wasting in chronic cases

V. Etiology of Tuberculosis in Unani System of Medicine

In the Unani system of medicine, tuberculosis (*Dā' al-Sil*) is traditionally understood as a chronic wasting disease associated with weakness of the affected organ,

derangement of temperament (*Sū'-i-Mizāj*), and deterioration of the body's nutritive and vital functions. Classical Unani physicians described several predisposing and contributing factors rather than identifying a microbial cause in the modern sense.

Etiological factor	Unani concept / description
<i>Sū'-i-Mizāj</i> (derangement of temperament)	Abnormal alteration of the temperament, particularly of the lungs, may predispose to <i>Dā' al-Sil</i> .
Weakness of the lungs	Weakness or reduced functional capacity of the lungs is considered an important predisposing factor.
<i>Mizāj-e-Hārr wa Yābis</i>	An excessively hot and dry temperament may contribute to wasting and dryness of pulmonary tissues in the traditional framework.
Excessive loss of body substance	Progressive depletion of the body's nutritive material (<i>Mawād-e-Ghidhā'iyya</i>) is associated with emaciation and weakness.
Poor nutrition	Inadequate quantity or quality of food may weaken the body and reduce its resistance.
Excessive physical exertion	Prolonged or excessive exertion may contribute to depletion of vital strength (<i>Quwwat</i>).
Excessive sexual activity	Classical texts may describe excessive sexual activity as a factor contributing to general weakness and wasting.
Psychological stress	Prolonged grief, anxiety and emotional disturbances are traditionally considered capable of weakening the body's vital functions.

Unhealthy air/environment	Exposure to polluted, contaminated or otherwise unhealthy air is considered unfavorable for pulmonary health.
Hereditary/constitutional predisposition	A naturally weak constitution or inherited susceptibility may predispose an individual to chronic wasting disorders.
Chronic diseases	Prolonged illness may weaken the body's vital and nutritive faculties and contribute to wasting.
Humoral disturbance	Abnormal quantity or quality of the Akhlāṭ (humours) may contribute to disease according to traditional Unani pathology.

VI. Small Intestine Tuberculosis

Small intestinal tuberculosis is a common form of gastrointestinal tuberculosis, with the ileum being affected more frequently than the jejunum or duodenum. The ileocecal region is the most commonly involved site, while isolated ileal disease can also occur.

Tuberculous enteritis generally has an insidious onset, and symptoms often become evident because of complications. Intestinal obstruction is the most frequent complication, particularly at the ileocecal valve. The obstruction develops gradually due to fibrotic strictures, mucosal inflammation, and enlarged lymph nodes causing external compression. Multiple strictures may

occur. Pathologically, intestinal TB commonly appears in two forms.

- **Ulcerative type** – more commonly involving the jejunum and ileum.
- **Hypertrophic type** – particularly involving the ileocecal region.

Clinical manifestations of obstruction include abdominal pain, nausea, vomiting, abdominal distension, and increased intestinal peristalsis. Guarding is generally absent, while abdominal tenderness is variable. Rarely, duodenal tuberculosis can cause gastric outlet obstruction, and isolated involvement of structures such as the ampulla of Vater has also been reported.

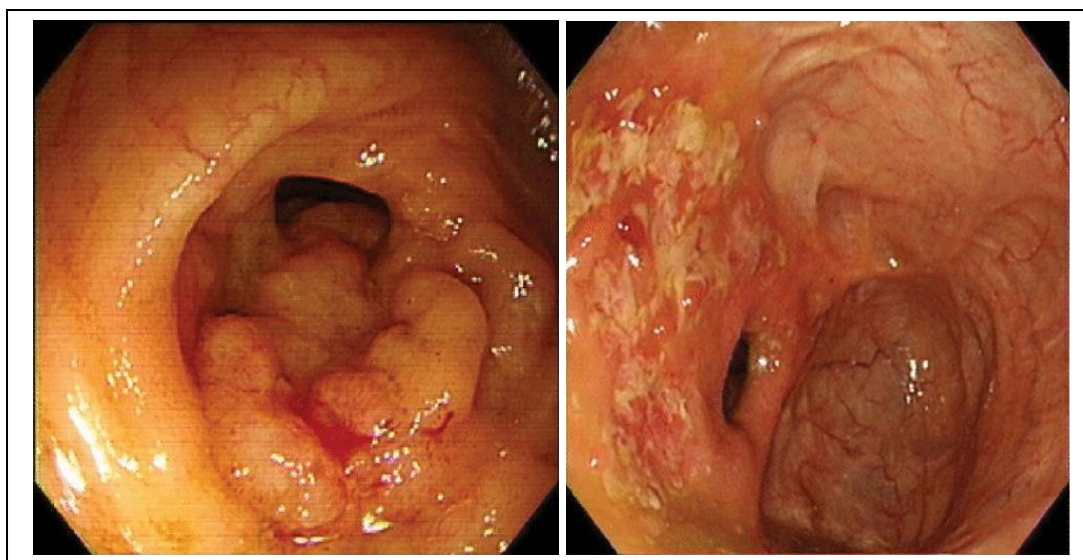


FIGURE 1 Endoscopic image of tuberculosis involvement of the ileocecal valve and proximal colon.

FIGURE 2 Endoscopic image of a patulous ileocecal valve with a classic, fish mouth deformity and an ascending colon with mucosal erythema and nodularity secondary to TB.

VII. Complications of Small Intestinal Tuberculosis

Small intestinal tuberculosis can cause several serious complications, with perforation being the second most common complication after obstruction.

- **Perforation:** Abdominal pain is the most common symptom, occurring in approximately 85–100% of cases. Reported perforation rates vary widely, and mortality may approach 30%. Multiple perforations can occur and are associated with increased mortality. Perforations are often **contained** because chronic fibrosis and adhesions limit leakage into the

peritoneal cavity. Therefore, the absence of pneumoperitoneum on imaging does not exclude perforation.

- **Gastrointestinal bleeding:** Severe bleeding is uncommon but can be life-threatening. Tuberculosis ulceration may cause bleeding, particularly in TB-endemic regions such as India. Massive hemorrhage may result from fistulization into vascular structures, including mesenteric vessels or the aorta.
- **Fistula formation:** Fistulae are relatively rare complications. Enterocutaneous fistulae are most

common, followed by enteroenteric and enterocolonic fistulae. Duodenal fistulae involving the biliary tract or kidneys have also been reported. Their presence can make differentiation from Crohn's disease difficult.

- **Malabsorption:** Approximately 20% of patients may develop mal-absorption. It is associated with intestinal obstruction, bacterial overgrowth, mucosal ulceration, reduced absorptive surface, lymphatic congestion, and fistulous bypass of intestinal segments. Severe obstruction can produce a "stagnant loop syndrome," in which intestinal stasis promotes bacterial overgrowth and mal-absorption.

This may lead to diarrhea, hypoproteinemia, increased postoperative mortality, and inadequate absorption of anti-tuberculosis drugs.

VIII. Treatment of Tuberculosis in the Unani System of Medicine

In the Unani system of medicine, tuberculosis (*Dā' al-Sil*) is traditionally managed by correcting the deranged temperament (*Islāh-i-Mizāj*), strengthening the affected organs, improving nutrition, and supporting the patient's general vitality. Treatment is individualized according to the patient's *Mizāj*, stage of disease, symptoms, and strength of the patient.

Approach	Purpose
Islāh-i-Mizāj	Correction of the deranged temperament
Taqwiyat-i-A'ḍā (organ strengthening)	Strengthening the lungs and other affected organs
Taqwiyat-i-Badan	Improving general physical strength
Ilāj bi'l-Ghidhā	Providing nutritious and easily digestible food
Ilāj bi'l-Dawā	Use of appropriate Unani medicines according to symptoms and temperament
Tadābir-i-Muhāfizāt	Maintaining a healthy environment and lifestyle
Supportive care	Improving appetite, digestion, sleep and overall wellbeing

IX. Diagnosis

Despite a high index of suspicion, intestinal TB can be difficult to diagnose. Symptoms are vague, signs are non-specific and the disease closely mimics many other diseases. The two most common differential diagnoses are Crohn's disease and carcinoma. Other possibilities include sarcoma^[15], amebiasis, *Yersinia* infection, gastrointestinal histoplasmosis, and periappendiceal abscess.^[16] Presentation can be acute, acute on chronic, or chronic and insidious. In areas of the world where the disease is endemic, correct clinical diagnoses are made only 50% of the time.^[12] Without a high index of suspicion, the disease is rarely diagnosed correctly.

Colicky, midabdominal and/or right, lower quadrant pain, which reflects intermittent partial small bowel obstruction, is the presenting complaint in 90–100% of patients.^[1, 2, 21, 37, 38] Weight loss is noted in 66% of cases, fever in 35–50%, and a change in bowel habits in 20%.^[12, 17, 18, 37, 39] Other complaints on presentation include: mal-absorption, weight loss, night sweats, malaise, anorexia, nausea, vomiting, melena, and rectal bleeding.

On physical examination, abdominal tenderness is present in most patients. Additionally, a right lower quad-rant mass (reflecting ileocecal involvement) is palpable 25–50% of the time.^[12, 17, 18, 37] Laboratory results can be nonspecific or normal. The most common abnormal laboratory finding is an elevated erythrocyte sedimentation rate, documented in 90% of patients. Mild anemia is also relatively frequent.^[12] A positive purified protein derivative (PPD) test is found in 70–86% of patients^[19,40]; however, this test has limited usefulness in immuno-suppressed patients.

Radiographic studies may be helpful, but they are non-specific.^[41] Evidence of active or healed TB on chest x-ray gives support to a diagnosis of TB; however, a normal chest x-ray does not exclude the disease. Bhargava *et al.*^[40] reported that in only 35% of 29 patients with segmental colonic TB was there evidence of old or active pulmonary mycobacterial infection. In addition, classic pulmonary changes with cavitation have been observed in only 6% of cases.^[2] Abdominal x-rays are equally inconclusive. Findings of dilated bowel loops, air-fluid levels, ascites, calcified lymph nodes. The pathognomonic histologic diagnosis but are nonspecific. Barium studies are more useful, supporting a diagnosis of intestinal TB 66% of the time. The most common findings on barium enema are a pipestem colon and a cone shaped, retracted cecum. Other findings include a wide gap between a thickened ileocecal valve and a narrowed ileum (Fleischner's Sign).^[14] and a fibrotic terminal ileum that empties into a rigid contracted cecum (Steirlin's Sign). The CT scan has some limited utility as a diagnostic test, with an average sensitivity of about 67%.^[1] The relevant findings on CT scan include extensive adenopathy (89%), splenomegaly (67%), hepatomegaly (37%), and ascites (26%).^[13]

Peritoneal biopsy performed by the blind percutaneous, laparoscopic, or open route is often worthwhile because of the high incidence of peritoneal involvement. Examination of ascitic fluid from a peritoneal tap can be diagnostic if acid-fast bacilli are visualized or cultured.^[12] Findings of a straw colored exudate, with protein concentration of >25 g/L and a lymphocyte count of >1000 cells/mm³ are nonspecific but are suggestive of TB.

Many practitioners consider colonoscopy to be the most

valuable diagnostic tool.^[27–29, 40] The ileocecal valve is often deformed and may be incompetent. The cecum also is usually deformed and contracted.^[27, 46] Bhargava *et al.* recently described other typical colonoscopic findings in 29 patients with colonic TB (40), including: 1) 4–8-cm segments of mucosal nodules and ulcerations; 2) areas of stricture with nodules and ulceration; 3) mucosal nodules with or without pseudopolypoid folds. The nodules (2–6 mm) may be either scattered or densely packed with both large (10–20 mm) and small (3–5 mm) ulcers often located between the nodules. Although much of the pathology is in the submucosa, multiple biopsies (8–10), taken from the ulcer margins, can be helpful. Granulomas are recovered more frequently from ulcerated lesions (48%) than from nodular lesions (25%).^[40]

Suspected diagnosis of intestinal tuberculosis can be confirmed with histology, smear, and culture, although each of these tests, individually, has low sensitivity (Table 2).^[40] Although culture is the hallmark for diagnosis, it has limiable. Caseation may be seen only in the lymph nodes and would therefore not be included in a biopsy specimen. Additionally, caseation may be totally absent in patients who have received anti-TB medications in the past.^[15,24] Culture and smear results together can also be misleading. The presence of granulomas on histology is

not always related to the yield of positive cultures. In view of the high variability in tests of histology, smear, and culture, the diagnostic yield is increased by *routinely performing each of these tests on all specimens*.^[40] Furthermore it is increasingly important to request culture sensitivities be-cause of a growing emergence of drug-resistant strains.

The promising new method of polymerase chain reaction (PCR) assay has recently been reported for the diagnosis of intestinal TB. Anand *et al.* reported the use of PCR on endoscopic biopsy specimens obtained in a patient with chronic diarrhea. In addition to the high sensitivity and specificity of PCR, results can be obtained in 48 h. This alone confers a major advantage inasmuch as culture results often take >4 wk, which delays treatment.

X. Unani Drugs Used in Intestinal Tuberculosis

In the Unani system of medicine, intestinal tuberculosis does not have a single classical drug equivalent to modern anti-tuberculosis therapy. Management is generally based on the patient's symptoms and on traditional concepts such as Islāh-i-Mizāj (correction of temperament), Taqwiya-i-Mi'da wa Am'ā (strengthening of stomach and intestines), and Taqwiya-i-Badan (general strengthening).

The following drugs are traditionally relevant to gastrointestinal and wasting conditions that may accompany intestinal TB.

Unani drug	Botanical source	Traditional relevance in intestinal TB
Asl-us-Sūs	<i>Glycyrrhiza glabra</i>	Demulcent and soothing; traditionally used for gastrointestinal irritation and inflammation
Unnab	<i>Ziziphus jujuba</i>	Traditionally used as a soothing agent in inflammatory conditions
Sapistān	<i>Cordia myxa</i>	Demulcent and traditionally used for mucosal irritation
Behīdāna	<i>Cydonia oblonga</i> seeds	Mucilaginous; traditionally used to soothe irritated gastrointestinal mucosa
Tukhm-e-Khatmi	<i>Althaea officinalis</i>	Demulcent and traditionally used for mucosal inflammation
Gul-e-Banafsha	<i>Viola odorata</i>	Traditionally regarded as soothing and anti-inflammatory
Ispaghula	<i>Plantago ovata</i>	Used traditionally for regulation of bowel movements, particularly where constipation or intestinal irritation is present
Asgand	<i>Withania somnifera</i>	Traditionally used as a restorative and general tonic in wasting and weakness
Mastagi	<i>Pistacia lentiscus</i>	Traditionally used as a gastrointestinal astringent and stomach-strengthening drug
Tabāshīr	Siliceous material from <i>Bambusa</i> spp.	Traditionally used in certain gastrointestinal preparations
Amla	<i>Phyllanthus emblica</i>	Traditionally considered digestive and restorative
Bael	<i>Aegle marmelos</i>	Traditionally used in intestinal disorders, especially diarrhoeal conditions

XI. DISCUSSION

Intestinal tuberculosis (ITB), referred to in the manuscript as Sil-e-Ama, remains an important form of gastrointestinal tuberculosis because of its variable clinical presentation and difficulty in distinguishing it from other chronic intestinal diseases. The present review highlights that intestinal tuberculosis frequently involves the ileocecal region and may present with nonspecific symptoms such as abdominal pain, fever,

anorexia, weight loss, altered bowel habits, nausea, vomiting, and abdominal distension. The insidious nature of the disease may result in delayed diagnosis and increased morbidity.

The pathophysiology described in the manuscript indicates that intestinal involvement may occur through hematogenous dissemination from pulmonary tuberculosis, swallowing of infected sputum, ingestion of

contaminated food or milk, or contiguous spread from adjacent structures. Following entry into the gastrointestinal tract, the bacilli reach the submucosa and produce inflammatory changes, lymphatic hyperplasia, granuloma formation, ulceration, caseating necrosis, and fibrosis. These pathological changes can progressively narrow the intestinal lumen and explain the development of obstructive symptoms. The particular susceptibility of the ileocecal region is related to physiological stasis, active absorption, and the abundance of lymphoid tissue in this region.

Clinically, the predominance of abdominal pain and obstructive manifestations is particularly significant. The review identifies intestinal obstruction as the most frequent complication, resulting from fibrotic strictures, mucosal inflammation, and enlarged lymph nodes. Perforation, gastrointestinal bleeding, fistula formation, and malabsorption represent additional serious complications. Malabsorption may further aggravate nutritional depletion and weakness, particularly when obstruction and bacterial overgrowth are present.

An important diagnostic challenge is the similarity between intestinal tuberculosis and Crohn's disease and gastrointestinal malignancy. The manuscript emphasizes that clinical findings and routine laboratory investigations may be nonspecific. Although elevated ESR, anemia, radiological abnormalities, and a positive PPD may provide supportive evidence, they cannot independently establish the diagnosis. Colonoscopy with multiple biopsies, histopathological examination, microbiological investigations, culture, and molecular methods such as PCR can contribute to diagnostic confirmation. This emphasizes the importance of maintaining a high clinical suspicion, particularly in endemic settings.

From the Unani perspective, tuberculosis is traditionally discussed under *Dā'al-Sil*, particularly as a chronic wasting disorder associated with *Sū'-i-Mizāj*, weakness of organs, disturbance of *Akhlat*, poor nutrition, and depletion of the body's nutritive and vital functions. Although the classical description does not correspond directly to the modern microbiological understanding of *Mycobacterium tuberculosis* infection, several features of the traditional description—progressive wasting, weakness, anorexia, fever, and loss of body substance—are clinically relevant to the chronic debilitating nature of tuberculosis.

The Unani therapeutic approach described in the manuscript is principally supportive and individualized. *Islāh-i-Mizāj*, *Taqwiyat-i-A'dā*, *Taqwiyat-i-Badan*, *Ilāj bi'l-Ghidhā*, and *Ilāj bi'l-Dawā* constitute the major therapeutic principles. Particular attention is given to strengthening the affected organs, improving nutritional status, supporting digestion and appetite, and maintaining an appropriate environment and lifestyle. Such an approach is especially relevant because chronic

intestinal tuberculosis may be accompanied by weight loss, weakness, malnutrition, and impaired gastrointestinal function.

Several Unani drugs mentioned in the review—including *Asl-us-Sūs*, *Unnab*, *Sapistān*, *Behidāna*, *Tukhm-e-Khatmi*, *Gul-e-Banafsha*, *Ispaghula*, *Asgand*, *Mastagi*, *Amla*, and *Bael*—are traditionally associated with soothing gastrointestinal irritation, supporting digestion, regulating bowel function, and improving general strength. However, their role as described in the manuscript is traditional and supportive rather than equivalent to modern anti-tubercular chemotherapy. The review itself states that intestinal tuberculosis does not have a single classical Unani drug equivalent to modern anti-tuberculosis therapy.

Overall, the discussion indicates that intestinal tuberculosis should be approached as a potentially serious chronic disease requiring early recognition, appropriate diagnostic confirmation, and timely conventional anti-tubercular management. The Unani framework may provide a complementary perspective concerning temperament correction, nutritional support, organ strengthening, and management of associated gastrointestinal symptoms. At the same time, traditional supportive measures should not replace appropriate modern diagnostic evaluation and evidence-based treatment of tuberculosis. The integration of these perspectives may be useful for understanding the disease comprehensively while maintaining patient safety and diagnostic accuracy.

CONCLUSION

Intestinal tuberculosis (*Sil-e-Ama*) is a clinically important form of gastrointestinal tuberculosis that may present with nonspecific gastrointestinal symptoms and can be difficult to distinguish from conditions such as Crohn's disease and gastrointestinal malignancy. The ileocecal region is the most commonly affected site, and delayed recognition may result in serious complications including intestinal obstruction, perforation, gastrointestinal bleeding, fistula formation, and malabsorption. Therefore, a high index of clinical suspicion together with appropriate imaging, endoscopy, histopathology, microbiological investigations, and molecular diagnostic methods is essential for accurate diagnosis.

From the Unani perspective, tuberculosis is traditionally considered under the broader concept of *Dā'al-Sil*, a chronic wasting disorder associated with *Sū'-i-Mizāj*, weakness of the affected organs, disturbance of *Akhlat*, and depletion of nutritive and vital functions. The principles of *Islāh-i-Mizāj*, *Taqwiyat-i-A'dā*, *Taqwiyat-i-Badan*, *Ilāj bi'l-Ghidhā*, and individualized *Ilāj bi'l-Dawā* provide a traditional framework for supportive management. Unani drugs such as *Asl-us-Sūs*, *Unnab*, *Sapistān*, *Behidāna*, *Tukhm-e-Khatmi*, *Asgand*, *Mastagi*, *Amla*, and *Bael* are traditionally used for gastrointestinal

irritation, digestive disturbances, weakness, and wasting. Thus, the Unani approach may offer valuable supportive concepts for addressing nutritional depletion, gastrointestinal symptoms, general weakness, and restoration of bodily strength in patients with intestinal tuberculosis. However, the traditional approach should be considered complementary to, rather than a substitute for, appropriate modern diagnostic evaluation and established anti-tuberculosis treatment. Further systematic clinical and pharmacological research is warranted to scientifically evaluate the safety, efficacy, and possible complementary role of traditionally used Unani interventions in intestinal tuberculosis.

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