



# REVIEW ON HERBAL DRUG USED IN TUBERCULOSIS

## 1. AKSHAY KISANRAO GHUMNAR

(RAJESH BHAIYYA TOPE COLLEGE OF B PHARMACY. CHH. SAMBHAJI NAGAR)

## 2. YASHRAJ SHUBHASH PACHANGE

(RAJESH BHAIYYA TOPE COLLEGE OF B PHARMACY. CHH. SAMBHAJI NAGAR)

## 3. VAIBHAV GAJANAN NAGRE

(RAJESH BHAIYYA TOPE COLLEGE OF B PHARMACY. CHH. SAMBHAJI NAGAR)

## 4. SHUBHAM RAJENDRA PISE

(RAJESH BHAIYYA TOPE COLLEGE OF B PHARMACY. CHH. SAMBHAJI NAGAR)

## 5. DIPAK JANARDHAN SHINGADE

(RAJESH BHAIYYA TOPE COLLEGE OF B PHARMACY. CHH. SAMBHAJI NAGAR)

### Abstract

Tuberculosis is an airborne infection that impairs lung function, and people with low immunity and other medical conditions are most vulnerable. Disease progresses sluggishly, symptoms appear only in advanced stages, and there follows a long remedial authority and eventually a long list of side effects. Some cases may not complete the course or may fall before their time. That could lead to multiresistance, which would make treatment more delicate. Ayurvedic drugs have been shown to integrate with the body in similar cases natural terrain and, according to numerous recent studies, significantly cut down mortality. The main reason for the growing fashionability of Ayurvedic drug is studies of lower toxin and lack of side goods in confluence with allopathic drugs. The purpose of this review is to punctuate exploration findings on antitubercular drugs and their antitubercular action, as well as chemical factors of these drugs.

Research Through Innovation

### Introduction

Tuberculosis, known as the "white plague," is a contagious disease caused by Mycobacterium tuberculosis. Another responsible Mycobacterium complex Tuberculosis is caused by Mycobacterium africanum, Mycobacterium avium complex, and Mycobacterium bovis. Tuberculosis bacteria substantially affect the lungs (pulmonary tuberculosis), but they can also attack any part of the body like the organs, brain, etc. In Ayurveda is tuberculosis given rather as compared to Rajayakshma (king of conditions) Shosha (prostration body apkins) Kshaya (reduced internal and external fleshly exertion) which is especially the Dhatukshaya (towel loss or damage) note. In the early stages of infection, tuberculosis was known as Yakshma in

Ayurvedic medicine; it was later given the name Rajayakshma. Around 500 BCE, Moon-God and King Brahmin were the first to fall victim to this complaint, which became known as Rajayakshma, or the king's complaint. This complaint is also called sosha in Ayurveda and is due to the loss of active or essential substances in the body like rasa, serum, etc. It's said that at the introductory doshas( pitta, vata, and kapha) of our body, which perform separate functions, this complaint occurs. In the bacterial infection of tuberculosis intimate process pathogenesis/development, there's Dhatwagninasana( metabolic dysfunction), in which rasa( towel fluid), rakta( blood), mamsa( muscle), meda( adipose tissue), and sukra( generative tissue) are oppressively damaged and occasionally lost and cannot be recovered. This leads to the final deterioration of impunity, or ojokshaya. According to the Ayurvedic conception, an unusual metabolic change (Pratilomakshaya) causes the loss of colourful dhatus( towel). dhatus towel) in the body dries up and leads to a decaying of the vulnerable system. Due to a weak and vulnerable system through which bacteria enter the body, bacterial infections are spread from person to person substantially by air transfer. The origin is Mycobacterium tuberculosis(Tuberculosis bacillus). In a small proportion of cases, a bacillus can be transmitted to humans from infected cows by drinking unsterilized milk. This system of transmission plays into the natural history of disease in humans. Pulmonary tuberculosis is the most common point of involvement; extrapulmonary tuberculosis is less common. Only pulmonary tuberculosis is contagious.

## Symptoms

According to Ayurveda, the symptoms of tuberculosis (Rajayaksham) include:

a surge, easy to try while doing small effects Reduced physical appetite to sneeze, urinate, and defecate;

✓Loss of body fluids, lubricant, apkins(ojas), and semen; Incorrect eating habits; lump of the

✓scrotum and circumstances of Atisara(diarrhoea)

✓Due to the below causes, Vatadosha is estimated, which results in increased pitta and kapha

✓and their extension to all joints and channels that are present in the body; As performing in channel gets.

✓blocked or enlarged and leads to complaint causing a reduction in number body apkins.

✓Clinical symptoms of these conditions include:

-nasal blockage-congestion leading to breathing difficulties -loss of appetite  
✓passions of hunger headache, shoulder or occasionally body pain, common pain

✓ vomiting occasionally accompanied by discomfort in the gastrointestinal tract, bowel problems( either relaxed movements or constipation).

## Diagnosis

Opinion-verified cases of pulmonary tuberculosis meeting addition (Body included) and rejection( Body face) criteria were assessed using private criteria as set out below:

➤Cough with or without fever for more than three weeks, product of foam, weakness, loss of body towel, Weakness and general health.

➤Ideal criteria include foam Acid-fast bacillus test positive, casketX-ray. Examination, including the bacterial cargo of foam( negative cases after treatment for three successive days after 24 hours of foam collection) Immunoglobulin A (IgA) and IgM (IgM) were determined on agar gel prepared with mortal IgA and IgM antibodies independently.

➤The zone was calculated and compared to the standard scale handed out by the company Hoechst, India. Total body water( TBW), fat-free mass( FFM), body mass indicator(BMI), and total body fat(TBF) were tested for in named cases with pulmonary tuberculosis and of normal age. A relative study

## Pathophysiology of tuberculosis

Tuberculosis is a potentially serious contagious infection generally caused by one of the two forms of mycobacteria

- Mycobacterium tuberculosis

- Mycobacterium Bovis

- This substantially affects the lungs( Pulmonary tuberculosis) and affects others as well corridor of the body( extrapulmonary tuberculosis)

- Stages of pulmonary tuberculosis
- Primary tuberculosis/ Ghon complex/ nonage tuberculosis
- Secondary tuberculosis/ reinfection/ habitual tuberculosis
- idle tuberculosis is asymptomatic and doesn't spread. Idle tuberculosis is suitable to be reactivated after immunosuppression in the host.
- The vulnerable system can be weakened by immunosuppressants (steroid, calcineurin impediments, etc.);
- mortal immunodeficiency contagion infection, malnutrition, growth, and other factors, etc., which can make bacteria more active.
- Extinguish, multiply, and move from granulomas and spread to other corridor lungs, causing active • Pulmonary tuberculosis
- This reactivation can happen months or years after the original infection; this condition is
- Known as secondary tuberculosis or reinfection.
- In some cases, the bacteria can spread to any part of the body, including the meninges, feathers, bones, and lymph.

Herbal medicine used to cure tuberculosis

### 1. Adulsa( Vasaka)

Scientific name: Justicia vasica

Common names: Malabar nut, adulsa, adhatoda, vasa, vasaka.

Family: Acanthaceae

Chemical elements: Vasicine, Vasicinone, and Sicineolone Medicinal Uses It's used to treat all types of coughs, habitual bronchitis, and asthma. The fruits are used to cure a cold, antispasmodic conditions, and bronchitis.

## 2. Ashwagandha



Scientific name: *Withania somnifera*

Common names: Indian ginseng, bane gooseberry, or downtime cherry

Family: Solanaceae

Chemical elements: withanolide, withaferin A

medicinal : It's an impunity-supporting condiment that principally acts on the nervous and respiratory systems. It has some magnificent parcels to heal the crack and also possesses anti-inflammatory action and invigorating parcels. Used to treat symptoms of tuberculosis, i.e., cough, cold, and bronchitis.

## 3. Brahmi



Scientific name: Bacopamonnieri

Common names: Hyssop, water hyssop, thyme, thumbled gratiola, condiment of grace, and Indian pennywort.

Family: Plantaginaceae

chemical elements: alkaloids like brahmine, herpestine, and nicotine; saponins similar to d-mannitol and hersaponin; acid A; and monnierin. Medicinal uses Brahmi acts on the various systems like the respiratory, nervous, digestive, circulatory, and excretory. It has several remedial goods, which include invigorating parcels and can be used to cure colds and coughs, i.e., common symptoms. Used in the form of an excerpt, greasepaint, or infusion or decoction form.

#### 4. Garlic



Scientific name: Allium sativum

Common name: Lahsun, Lashuna

Family: Amaryllidaceae

Chemical element: sulphur, containing amino acids known as alliin, ajoene, diallyl polysulfides, vinylidithiins, and S-allylcysteine.

Medicinal uses Garlic has tremendous potential to cure colourful conditions similar to anti-oxidants, bacteriostatics, Antifungal medications also cure digestive issues. It plays a pivotal role in the treatment of some common symptoms of tuberculosis, such as reducing cough, cold, traffic, and others.

## 5. Tulsi



Scientific name: *Ocimum tenuiflorum*

Common name: Holy basil;

family: Lamiaceae

Chemical elements: Tulsi essential oil painting consists substantially of eugenol, -elemene, -caryophyllene, and germacrene, as well as isothymusin.

Medicinal uses Tulsi is one of the oldest sauces specified by Ayurveda, which corresponds to carminative, stomachic, antispasmodic, antiasthmatic, antirheumatic, expectorant, and hepatoprotective parcels.

## 6. Guduchi



Scientific name: *Tinospora cordifolia*

Common name: heart-leaved moonseed; Giloy

family: Menispermaceae

Chemical Elements: Include berberine and bitter principles, including columbin, chasmanthin, palmarin, and tinosporon, as well as tinosporoside, tinosporic acid, and tinosporol.

Medicinal uses Its antibacterial pills help to cure tuberculosis and its prominent symptoms. Used in the form of maquillages and excerpts.

## 7. Alovera



Scientific name: *Aloe barbadensis*



Common name: Aloe vera, Aloe, burn factory, lily of the desert, giant's bitterness

Family: Liliaceae

Chemical element: anthraquinone glycosides have active principles that retain anti-tubercular exertion. Aloe leaf juice contains glucose, galactose, mannose, and glucuronic acid. Medicinal Uses Active ingredients help with anti-tubercular exertion and give relief to cases.

## 8. Amla



Scientific name: *Phyllanthus emblica*

Common name: Indian gooseberry, also known as myrobalan, myrobalan Malacca tree, or amla (from Sanskrit: amalaki);

family: Phyllanthaceae.

Chemical element: amla is rich in vitamin C( ascorbic acid) and contains colourful bioactive phytochemicals, of which the polyphenols( ellagic acid, chebulinic acid, gallic acid, chebulagic acid, apeigenin, and quercetin) are the most mature.

Medicinal Uses Boost immunity and improve the digestion process in cases; it also retains high antibacterial exertion. It can be used in the form of saccharin, amla, or ayurvedic chewing tablets.

## 9. Black Pepper



Scientific Name: *Piper nigrum*

Common name: peppercorn;

family: Piperaceae

Chemical elements: aristolactams, dioxoaporphines long-chain isobutyl amide, lignin, longamide, pluviatilol, which also contains methyl pluviatilol( fargesin), asarinine, piperine, etc.

Medicinal Uses Piperine is a largely effective phytochemical present in pepper that reduces the intensity of pain and lumps. It also possesses anti-congestion property and clears the dammed passage, which aids in ameliorating breathing by acting as a bronchodilator in tuberculosis cases.

## 10. Vidirakand



Scientific name: *Pueraria tuberosa*

Common name: kudzu, Indian kudzu, or Nepalese kudzu; Vidarikand; Sanskrit: Bhukushmandi Family: Fabaceae

Chemical It helps in gaining weight in sick cases, as weight loss is a prominent symptom of tuberculosis. It can be used in the form of an excerpt or the dry greasepaint of tubers.

## 11. Mint



Scientific name: *Mentha piperita*, also known as *Mentha balsamea* Wild

Common name: peppermint, pudina (a mongrel between water mint and spearmint),

family: Lamiaceae Chemical element: peppermint leaves contain several essential oils, including menthol, menthone, and limonene.

Medicinal uses Mint leaves are useful in managing gastrointestinal problems, relieving the symptoms of a common cold (cough, congestion), acting as an antibacterial and anti-inflammatory, Mint juice is given to tuberculosis patients to ameliorate their health.

## 12. Noni



Scientific name: *Morinda citrifolia*

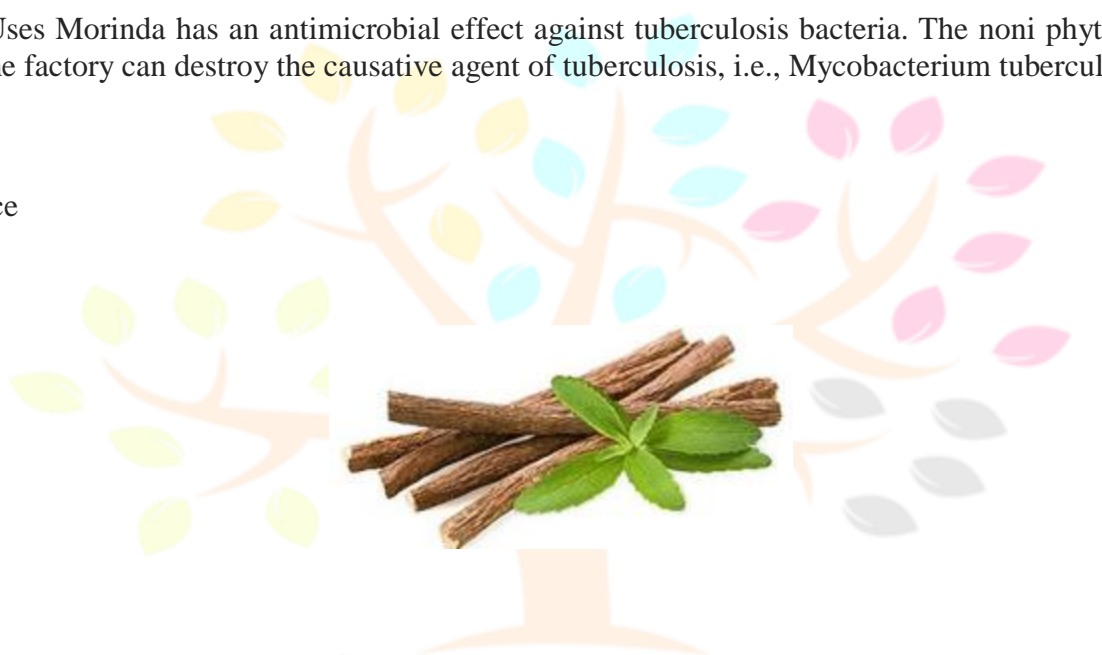
Common name: Morinda; noni fruits; Indian mulberry;

family: Rubiaceae

Chemical element: The major chemical ingredients of this factory include anthraquinones, flavonol glycosides, iridoid glycosides, and triterpenoids.

Medicinal Uses Morinda has an antimicrobial effect against tuberculosis bacteria. The noni phytochemical present in the factory can destroy the causative agent of tuberculosis, i.e., *Mycobacterium tuberculosis*.

13) Liquorice



Scientific name *Glycyrrhiza glabra*

Family Fabaceae Kingdom Plantae

Order Fabales

Uses Literature has suggested that the antituberculosis conditioning of numerous licorice factors appears to include cell cycle arrest, apoptosis induction, and general antioxidant goods involving a variety of proteins at least laterally, including numerous cell cycle-related proteins and apoptosis-associated proteins.

## Reference

- 1) Annabel Kanabus. Information about Tuberculosis. viewed 01 July 2021. History of TB in India - Ancient times until end of colonial rule – TBFacts. 2020.
- 2) RISA Admin. 19 April 2016. Symptoms of Tuberculosis. viewed 30th June 2018.
- 3) Alila Medical Media. Tuberculosis (TB). viewed 29 June 2021 <https://www.alilamedicalmedia.com/media/63e4494c-bc90-4b5f-a058-dccd2756252e/progression-of-tuberculosis-narrated-animation>.
- 4) Rotimi Adigun. 27th oct 2020. Tuberculosis. viewed 29th June 2021 <https://www.statpearls.com/ArticleLibrary/viewarticle/30653>.
- 5) KD Tripathi. Essentials of Medical Pharmacology, 7th ed, Jaypee Brothers Medical Publishers(P)Ltd, 2013; 766.
- 6) P. K. Debnath, Jaydeb Chattopadhyay, Achintya Mitra, Anjan Adhikari, Mirza Samsur Alam, SK Bandopadhyay, Jayram Hazra, July-September 2012 the Approach of Ayurveda in the treatment of tuberculosis
- 7) T Lakshmi, Anitha Roy, NE Kaviya. August 2020 Ayurvedic medicinal plants used to cure Tuberculosis. viewed 29 June 2021. <https://www.researchgate.net/publication/344726156>
- 8) Dr. Laxmidutta Shukla. 28 February 2019 Ayurvedic medicinal plants used to cure Tuberculosis. viewed 30 June 2021. <https://www.myupchar.com/en/disease/tuberculosis-tb/ayurveda>.
- 9) Editorial Team. 19 August 2020 Ayurvedic medicinal plants used to cure Tuberculosis. viewed 29 June 2021. <https://ayurvedicmagazine.com/ayurvedic-medicine-for-tuberculosis/>. World Journal of Advanced Research and Reviews, 2021, 11(03), 280–290 290
- 10) Vikrant Arya. June 2011 Ayurvedic medicinal plants used to cure Tuberculosis. viewed 1 July 2021

11) [https://www.researchgate.net/profile/VikrantArya/publication/267963188\\_A\\_Review\\_on\\_AntiTubercular\\_Plants/links/5e1499b092851c8364b75146/A-Review-on-Anti-Tubercular-Plants.pdf](https://www.researchgate.net/profile/VikrantArya/publication/267963188_A_Review_on_AntiTubercular_Plants/links/5e1499b092851c8364b75146/A-Review-on-Anti-Tubercular-Plants.pdf)

12) Siti Nuurul Huda Mohammad Azmin, Zainuddin Abdul Manan, Sharifah Rafidah Wan Alwi, Lee Suan Chua, Azizul Azri Mustafa, Nor Alafiza Yunus. 25 January 2016 General methods of extraction for herbal medicines. viewed 01July2021.

13) <https://www.researchgate.net/profile/Siti-Nuurul-HudaMohammadAzmin/publication/292077637/figure/fig1/AS:544918460432384@1506930093182/The-10-extractionmethods-described-in-the-text.png> [13]

14) Dr. Vikram Chauhan. 03 September 2019. Ayurvedic medicines used to cure tuberculosis viewed 30 June 2021. <https://www.alwaysayurveda.net/2019/09/treatment-of-tuberculosis-throughayurveda.html>.

15) Lucy Burns. 18 December 2018. Side Effects of Ayurvedic Supplements. viewed 30 June 2021. <https://healthfully.com/side-effects-of-ayurvedic-supplements-6581643.html>.

16) Dr. Jagdev Singh. 27 August 2014. Chyawanprash Benefits, Ingredients, Dosage & Side Effects viewed 30 July 2021. <https://www.ayurtimes.com/chyawanprash-benefits-ingredients-nutritionfacts-dosage-side-effects/>.

17) Drx. Hina Firdous. Diet Chart for Tuberculosis. viewed 30 June 2021. <https://www.lybrate.com/topic/diet-fortuberculosis>.

