

TUBERCULOSIS

BACKGROUND OF THE STUDY

Tuberculosis is a communicable disease resulting from infection with *Mycobacterium tuberculosis* whose principal reservoir is man (Ahmed *et al.*, 2004). In 1993, the world organization (WHO) declared TB is a global emergency disease (Aisu *et al.*, 1995). It is estimated that between 2009-2025 nearly one billion people will be newly infected, 200 million people will get TB and 40 million are likely to die from it if control programs do not improve (Benard, 2006). Tuberculosis is a disease of the poor and under privileged. To improve socio-economic conditions and availability of effective drugs, spread of TB infection has been effectively controlled in many parts of the world. In industrialized countries this disease is generally associated with identified high risk groups such as the elderly, immigrants from TB high prevalence areas, the homeless, drugs and alcohol addicts.

INTRODUCTION

Tuberculosis (TB) is an infectious airborne deadly disease mainly caused by *Mycobacterium tuberculosis* which belongs to the genus *Mycobacterium*. Other strains of mycobacteria that cause TB are *M. bovis*, *M. africanum*, *M. microti*, *M. avium* and *M. leprae* (Benna, 2012). *Mycobacterium tuberculosis* was first isolated in 1882 by Robert Koch who received Nobel Prize for this discovery in 1905 (Kaufmann, 2003). *M. tuberculosis* is an aerobic, rod shaped, nonmotile, slow growing and acid fast bacterium. It mainly grows in tissues with high oxygen content such as the lungs but can also infect other parts of the body such as brain, stomach, bones, skin, intestine, spinal cord etc.

It spreads through air, when people having an active TB infection cough, sneeze, or otherwise transmit their saliva through air. However, not all people infected with TB bacilli become sick, only 5 to 10% people develop active disease in their lifetime and rest of the 90% do not get infected and cannot transmit the organism (Koul *et al.*, 2011). But the situation becomes more severe to people with human

immunodeficiency virus (HIV) infection and they are more likely to be infected with TB due to their weak immune system (Swaminathan *et al.*, 2010). The commonly observed symptoms of tuberculosis includes chronic cough with blood tinged sputum, chest pain, fever, night sweats and weight loss (Health topics).

The number of people infected with TB and the deaths reported every year is enormously high. According to World Health Organization (WHO), 9.4 million new TB cases and 1.7 million deaths were reported due to TB in 2010. All countries are affected with TB but it is predominant in many Asian and African countries with 80% of the population infected, while only 5-10% population affected in the US. Five countries namely, India, China, Indonesia, South Africa and Nigeria have the highest TB disease burden and about one-fifth of the global TB cases are reported in India alone (WHO, 2010). Each year, nearly 2 million people in India develop TB with estimated 330,000 deaths.

PREVALENCE OF TUBERCULOSIS

The general measures can be taken to prevent the spread of active TB:

- Avoiding contact with other people at school or work place
- Wearing a mask/covering the mouth, and
- Ventilating rooms can also limit the spread of bacteria.

TB VACCINATION

In some countries, BCG injections are given to children in order to vaccinate them against tuberculosis. It is not recommended for general use, because it is not that effective in adults and it can adversely influence the results of skin testing diagnoses.

PATHOPHYSIOLOGY

Once inhaled, the infectious droplets settle throughout the airways. The majority of the bacilli are trapped in the upper parts of the airways where the mucus secreting goblet cells exist. The mucus produced catches foreign substances, and the

cilia on the surface of the cells constantly beat the mucus and its entrapped particles upward for removal. This system provides the body with an initial physical defense that prevents infection in most persons exposed to tuberculosis.

RISK FACTORS

Tuberculosis is not easily spread; it is usually spread between people who are in close contact. There are many risk factors for developing tuberculosis. Certain groups of people have a high risk, such as people who work in hospitals and other areas where TB-infected people may reside (jails, nursing homes, and homeless shelters). Close association with drug users, or people with known TB infections are also at higher risk. Other people at high risk including:

- ✓ Visitors and immigrants from areas known to have high incidence of TB
- ✓ Children and the elderly with weakened immune systems
- ✓ Patients with HIV infection
- ✓ Drug abusers, especially IV drug abuser
- ✓ Transplant patients
- ✓ Diabetics
- ✓ Kidney disease
- ✓ People undergoing immunosuppressive therapy
- ✓ Silicosis

CAUSES OF TUBERCULOSIS

Tuberculosis is directly caused by bacteria which spread from one person to another through microscopic droplets that are released into the air. The droplets are from someone who is untreated and has an active form of tuberculosis when he/she speaks, coughs, spits, sneezes, laughs or sings. Tuberculosis is contagious, but it is difficult to catch.

SIGNS AND SYMPTOMS OF TUBERCULOSIS

- ✓ Fever
- ✓ Night seats

- ✓ Cough
- ✓ Hemoptysis (coughing up bloody sputum)
- ✓ Decrease/ loss of appetite
- ✓ Weight loss
- ✓ Fatigue
- ✓ Chest pain
- ✓ Shortness of breath
- ✓ Swollen lymph nodes

DIAGNOSIS

The most common diagnostic test for TB is a skin test, where a small injection of PPD tuberculin, an extract of the TB bacterium is made just below the inside forearm. The injection site should be checked after 2-3 days and if a hard, red bump has swollen up to a specific size, then it is likely that TB is present. Unfortunately, the skin test is not 100% accurate and has been known to give incorrect positive and negative readings. However, there are other tests that are available to diagnose TB. Blood test, chest X-rays, and sputum tests can be used to test for the presence of TB bacteria and may be used alongside a skin test.

TREATMENTS

The majority of TB cases can be cured when the right medication is available and administered correctly. The accurate type and length of antibiotic treatment depends on a person's age, overall health, potential resistance to drugs, whether the TB is latent or active and the location of infection (lungs, brain, kidneys).

People with latent TB may need just one kind of TB antibiotics, whereas people with active TB will often require a prescription of multiple drugs. Antibiotics are usually required to be taken for a relatively long time. The standard length of time for a course of TB antibiotics is about six months. TB medication can be toxic to the liver and although side effects are uncommon. When they do occur, they can be quite serious. Potential side effects should be reported to a doctor and include

- ✓ Dark urine
- ✓ Fever
- ✓ Jaundice
- ✓ Loss of appetite
- ✓ Nausea and vomiting

It is important for any course of treatment to be completed fully, even if the TB symptoms have gone away. Any bacteria that have survived the treatment could become resistant to the medication that has been prescribed and could lead to developing MDR-TB in the future.

Directly observed therapy (DOT) may be recommended. This involves a healthcare worker administering the TB medication to ensure that the course of treatment is completed.

REFERENCE

1. Ahmed *et al.*, 2004. Distinctiveness of mycobacterium tuberculosis genotypes from human immunodeficiency virus type 1-seropositive and seronegative patients in lima, Peru. *Journal of clinical microbiology*, 41:1713-1716.
2. Aisu *et al.*, 1995. Preventative chemotherapy for HIV associated tuberculosis in Uganda; an operational assessment at voluntary counseling and testing centre. *AIDS*, 9:267-273.
3. Benard, F. 2006. MRC national tuberculosis Research Programme; South Africa.
4. Benna, Rawat, D.S. 2012. Antituberculosis drug research: a critical overview. *Med. Res. Rev*, 1-72, DOI 10.1002/med.21262.
5. Kaufmann, S.H.E. 2003. A short history of Robert Koch's fight against tuberculosis: Those who do not remember the past are condemned to repeat it. *Tuberculosis*, 83, 86-90.
6. Koul *et al.*, 2011. The challenge of new drug discovery for tuberculosis. *Nature*, 469, 483-490.
7. Swaminatham *et al.*, 2010. HIV-Associated Tuberculosis: Clinical Update. *Clin.Infect.Dis.* 50, 1377-1386.
8. Health topics. Tuberculosis. <http://www.who.int/topics/tuberculosis/en/>
9. World Health Organisation 2010/2011 Tuberculosis Global Facts.

RAJAYAKSHMA (TUBERCULOSIS IN AYURVEDA)

MYTHOLOGICAL ORIGIN OF RAJAYAKSMA:

The mythological story narrated by the Gods to the sages regarding origin of Rajayakshma relates to the habitual sex indulgence of Chandra (the moon). The moon being exceedingly attached to Rohini - nakshtra (the star Aldebaram) did not care for his health. He became emaciated due to the depletion of unctuousness. He was, therefore, not able to satisfy the sexual urge of the rest of the daughters of Daksha Prajapati. Therefore, Daksha's anger came out of his mouth in the form of breath and took a physical form.

The moon had earlier been married to the 28 daughters of Prajapati but failed sexually. So moon was afflicted by Rajayakshma as a result of Daksha's expression of anger. Moon's discriminatory treatment with his wives and the resultant preponderance of Rajas (the second Guna representing passionate disposition) as well as weakness. Being subdued by the excessive anger of Daksha, the moon was depleted of his complexion.

Accompanied by the gods and godly sages, Daksha was treated with the twin doctors of Gods - Ashwini Kumaras. Moon's vitality (Ojas) was enhanced, he became free from ailments, became gifted with complexion and attained purity of mind (Shuddha Sattva)

The words Krodha, Yakshma, Jvara and Roga are all synonymous, and they connote Duhkha (misery). Since it inflicted misery (Yakshma) upon the Rajan or the king [of stars], the ailment is known as Raja- Yakshma. This Rajayakshma, being ousted [from the heaven] by the 2 Asvins, came down to the world of human beings. Thus, this disease afflicts human beings activated by the 4- fold causative factors.

RAJAYAKSHMA NIDANA - FOUR FOLD CAUSATIVE FACTORS:

The causative factors of the Rajayakshma are of 4 categories, namely

1. Ayatha balam aarambham - Over exertion (exceeding one's own capacity)
2. Vega sandharana - Suppression of natural urges
3. Kshaya - Depletion of tissue elements'
4. Vishamashanam - Irregular dieting

ETIOLOGY OF RAJAYAKSHMA CAUSED BY OVER- EXERTION:

Vata gets aggravated due to chest injury caused by

Yuddha - fighting,

Adhyayana - reading(reciting Mantras) loudly,

Bhara - carrying excessive weight,

Adhva - walking long distance,

Langhana - observing fast for a long time,
Plavana - excess swimming,
Patana - falls,
Abhighata - assault and other forms of over exertion exceeding one's own capacity.

The above activities aggravate Vata dosha. Vata in turn stimulates Pitta and Kapha and rapidly circulate all over the body (Pradhavati).

11 SYMPTOMS OF RAJAYAKSHMA CAUSED DUE TO EXCESS PHYSICAL EXERTION:

When the aggravated Vata Dosha is located in head, it causes -

1. Shiro ruja - Headache

When located in the throat it causes

2. Kantho dvamsa - Irritation in the throat, loss of voice

3. Kasa - Cough

4. Svara bheda - Hoarseness of voice and

5. Aruchi - Anorexia

When located in the sides of the chest, it causes

6. Parsvasula (pain in the sides of the chest)

When located in the anus, it causes

7. Atisara - Diarrhea;

When located in the joints, it causes

8. Yawning and

9. Jwara - Fever and

When located in the chest, it causes

10. Ura shoola - Pain in the chest.

Because of the injury to the chest, as well as coughing the patient

11. Spits out phlegm along with blood.

Thus the patient suffers from unbearable pain in his chest due to the pulmonary damage (Jarjarena Urasa).

These 11 symptoms mentioned above are manifested in the patients suffering from Yakshma (tuberculosis) caused by over-exertion. Therefore, a wise person should not indulge in over-exertion.

CAUSES OF RAJAYAKSHMA CAUSED BY SUPPRESSION OF NATURAL URGES:

When a person suppresses the manifested natural urges of flatus, urine and stool because of bashfulness, aversion and fear, the Vata gets aggravated due to obstruction to its movement, and it aggravates Kapha, Pitta along with Vata Dosha. This aggravated Vayu, moving upwards, downwards and side wards, causes 11 symptoms or disorders as below.

11 SYMPTOMS OF RAJAYAKSHMA CAUSED DUE TO SUPPRESSION OF NATURAL URGES:

1. Pratishyaya (coryza)
2. Kasa - Cough
3. Svava bheda - Hoarseness of voice
4. Aruchi - Anorexia
5. Parshva shula - Pain in the sides of the chest
6. Shiro ruja - Headache
7. Jwara - Fever
8. Amsa avamardanam - Kneading pain in the shoulder region
9. Anga mardam - Malaise
10. Muhur chardi - Frequent vomiting and
11. Varcho bheda - Diarrhoea having the signs and symptoms of all the 3 Doshas.

CAUSES OF RAJAYAKSHMA CAUSED BY KSHAYA (DIMINUTION OF TISSUES):

Shukra (semen) and Ojas (immune system) get diminished because of excessive emaciation as a result of jealousy, anxiety, fear, apprehension, anger, grief, excessive indulgence in sex, fasting and intake of less nourishing food and aggravation of Vata Dosha.

This aggravated Pitta and Kapha, and produces 11 signs and symptoms as below.

11 SYMPTOMS OF RAJAYAKSHMA CAUSED DUE TO KSHAYA - TISSUE DEPLETION:

1. Pratishyaya (coryza)
2. Jwara - Fever
3. Kasa - Cough
4. Anga marda - Malaise
5. Shiro ruja - Headache
6. Shwasa - Dyspnoea
7. Vit bheda - Diarrhea
8. Aruchi - Anorexia
9. Parshva shula - Pain in the chest
10. Svava kshayam - Aphasia
11. Burning sensation in the shoulder region.

CAUSES OF RAJAYAKSHMA CAUSED BY VISHAMASHANA (DIET IRREGULARITIES):

Irregularity in intake of foods and drinks leads to Vata aggravation, resulting in the manifestation of acute diseases with irregular increase of Doshas.

The aggravated Doshas caused due to food irregularities obstruct Srotas – channels of tissues like blood channels. This causes obstruction to flow of nutrition from one Dhatu (tissue) to the other leading to tissue depletion. This leads to manifestation of below 11 symptoms:

11 SYMPTOMS OF RAJAYAKSHMA CAUSED DUE TO VISHAMASHANA - IRREGULAR DIET:

- (1) Pratishyaya – coryza
- (2) Praseka – excessive salivation
- (3) Kasa – Cough
- (4) Chardi – Vomiting and
- (5) Aruchi – Anorexia the aggravated Pitta causes
- (6) Jwara – Fever
- (7) Mamsa abhitapa – Burning sensation in the shoulders and
- (8) Rudhira Chardi – Hemoptysis and the aggravated Vayu causes
- (9) Parshva shula – Pain in the sides of the chest
- (10) Shira shula – Headache and
- (11) Svara bheda – Hoarseness of voice

Thus, Rajayakshma being a conglomeration of several diseases is manifested in 11 forms depending upon 4 fold causative factors.

RAJAYAKSMA PURVAROOPA- PREMONITORY SIGNS AND SYMPTOMS:

The following are the premonitory signs and symptoms of Rajayakshma having several varieties.

1. Pratishyaya (Coryza) and Daurbalyam – weakness
2. Dosha darshanam – Finding fault with right things
3. Beebhatsa darshanam – Appearance of ugly signs and symptoms in the body
4. Ghrunitvam Ashnataha – Feeling of disgust towards food
5. Bala mamsa kshaya – Diminution of strength and muscle tissue
6. Stri madya mamsa priyata – Liking towards women, alcohol and meat
7. Priyata avaghuntane – Liking for isolation
8. His food and drinks are infested with the fall of flies insects, hair and nails
9. Assault by birds, wasps and animals
10. Climbing of heaps of hair, bones and ashes in dreams and
11. Dreams of ponds, mountains and forests, which are already dried, or getting dried and fall of planets.

RAJAYAKSHMA SAMPRAPTI - PATHO-PHYSIOLOGY:

Now we shall describe details of signs and symptoms along with remedies of this disease.

The Dhatus (tissues) get nourished with the help of their own Dhatu agni. Rasa dhatu digests food to nourish Rasa Dhatu by means of Rasa Dhatu agni, Rakta gets nourished with the help of Rakta Dhatu agni and so on.

But when there is obstruction of Rasavaha srotas, the rest of the Dhatus lack nourishment (Viz Rakta, Mamsa, Meda, Asthi, Majja and Shukra).

When Dhatus lack nourishment, they undergo Kshaya - depletion. and Dhatu agni (digestion and metabolism strength also depletes).

Hence, the food fails to nourish all the tissues and gets converted to stools. All the nourishment and Ojas gets wasted in the form of stool (Pureesha). Hence, in the patient of Rajayakshma, patients stool should be protected. (Measures should be taken to channelize nutrition from the stools containing the nutritious part).

Due to obstruction to channels carrying nutritious part of food (Rasavaha Srotas), Rasa dhatu (end product-nutritious part of food) is struck, leading to symptoms like Kasa - cough etc, in the disease Rajyakshma. This leads to manifestation of 6 or 11 symptoms as explained below. The syndrome that manifests with 6 or 11 symptoms is together called Rajyakshma.

11 LASKHANAS (FEATURES) OF RAJAYAKSHMA:

Thereafter, 6 or 11 forms of diseases are manifested. Their conglomeration is called Rajayakshma.

1. Kasa - Cough
2. Amsa abhitapa - Burning sensation in the shoulders
3. Svara bheda - Impairment of the voice
4. Jwara - Fever
5. Parshva shoola - Pain in the sides of the chest
6. Shiro ruja - Headache
7. Rudhira chardi - Hemoptysis
8. Spitting of phlegm
9. Shvasa - Dyspnoea
10. Varcha -Diarrhea and
11. Aruchi - Anorexia

These are the 11 forms of diseases which constitute Rajayakma (tuberculosis)

6 SYMPTOMS OF RAJAYAKSHMA:

1. Kasa - Cough
2. Jwara - Fever
3. Parshva shoola -Pain in the sides of the chest

4. Svava bheda – Impairment of the voice
5. Atisara – Diarrhea and
6. Aruchi – Anorexia-

These 6 ailments also constitute Rajayakshma.

If there is diminution of muscle tissue and strength then the patient of Rajayakshma having all the 11 or 6 or any of the 3 signs and symptoms should not be treated. (He will die soon)

If there is no diminution of muscle tissue or strength, then the patient of Rajayakshma is treated even if all the signs and symptoms are manifested

PRATISHYAYA (CORYZA)- RUNNING NOSE

Vata Dosha obstructs Kapha, Rakta (blood) and Pitta at the root of nose, leading to Pratishyaya – running nose. Body tissue gets depleted leading to below symptoms –

Shira shula – headache

Gauravam – heaviness

Ghrana viplavah – stuffy nose

Jwara – fever

Kasa – cough

Kaphotklesa – mucous nausea

Svava bheda – Hoarseness of voice

Aruchi – Anorexia,

Klama – fatigue and

Indriyanam Asamarthyā – Inability of sensory and motor organs to perform their functions.

CHARACTERISTICS OF COUGH:

The patient of Rajayakshma, while coughing, spits out Rasa (Plasma or mucoid secretion) mixed with Phlegm

Pichila – slimy

Bahalam – Thick

Visra – Putrid in odor and

Harita, sweta peeta – green, white or yellow in color.

CHARACTERISTICS OF FEVER:

The characteristic features of Jwara in Rajayakshma:

Amsa parshva abhitapa – Burning sensation in the shoulders sides of the chest

Kara pada daha – burning sensation in the hands and feet and

Jwara – increased temperature all over the body.

SVARABHEDA (HOARSENESS OF VOICE):

If caused by Vata, Pitta, Kapha, and Raktha, then the symptoms will be –
Svarabheda (Hoarseness of voice)
Kasavega (Strain of coughing) or
Pinasa (Chronic rhinitis) occurs.

If it is caused by **PITTA**, then there will be
Burning sensation in the palate and throat, and
The patient will refrain from speaking.

If it is caused by **KAPHA**,
The voice becomes Vibaddha (obstructed or choked) and
Khurakhura (rubbing noise)

If it is caused by **RAKTA**, then the voice becomes low and because of obstruction,
the voice comes out with difficulty.

If the hoarseness of the voice is caused by strain of excessive coughing, then it is
associated with injury to the throat.

If it is caused by Pinasa (chronic rhinitis) then the signs and symptoms of Kaphaja
and Vatika types (mentioned above) are manifested.

PAIN IN THE SIDES OF THE CHEST AND HEAD:

In a patient of Rajayakshma, pain in the sides of the chest is indeterminate, it is
associated with the contraction of chest and sometime it is associated with the
expansion of the chest.

In the patient of Rajayakshma, headache is associated with burning sensation and
heaviness.

SPITTING OF BLOOD:

When the body of the patient suffering from Rajayakshma becomes emaciated, the
accumulated and excited blood and phlegm comes out from the throat.

Cause of Bleeding

Because of obstruction to the channels of the blood, it becomes incapable of getting converted into Mamsadhatu (Muscle tissue) etc. this gets accumulated in excess in Amasaya (stomach) and being excited, it comes out through the throat.

DYSPNOEA AND DIARRHOEA:

The patient of Rajayakshma suffers from Shwasa by Vata and Kapha.

This patient passes the quantity of stool along with mucus because of the suppression of Agni (enzymes) by the vitiated Doshas.

ARUCHI (ANOREXIA OR AVERSION FOR FOOD)

Arochaka (aversion towards food) is caused by individual Doshas and by all the Doshas simultaneously vitiated.

These vitiated Doshas are located in the tongue as well as heart.

In Vata aggravation, mouth will have astringent taste, in Pitta, bitter taste and in Kapha, it gets sweet taste.

CHARDI (VOMITING):

Chardi (vomiting) is caused due to Arochaka (anorexia), strain of coughing, excitation of Doshas and fear. This vomiting might also occur as a complication in other diseases.

RAJAYAKSHMA CHIKITSA - TREATMENT:

All varieties of Rajayakshma are caused by simultaneous vitiation of all the 3 Doshas. After ascertaining the proportionate dominance of Doshas, the physician should treat the patient suffering from these diseases, on the basis of the stage of the ailment.

Various treatments for Pratishyaya (Coryza), headache, cough, dyspnoea, Svarakshaya (Aphasia) and pain in the sides of the chest, in general, will now be described.

Chikitsa Sutra - Line of treatment

The hot soup of the meat of Lava, Tittiri - Partridge, Daksha and Vartaka, added with Salt, sour as well as pungent herbs and Sneha (oil, ghee etc.) is used for preparing thick gruel. It is used for Swedana, Abhyanga, Dhuma (herbal smoking), Alepana(external application), Parisheka (sprinkling of liquids), Avagaha (dipping, bath). Yavaka Vatya (preparation of barley water) is used in the treatment of Pinasa(Coryza).

The patient should take the soup of the meat of goat added with barley, horse gram, ginger, pomegranate (Dadima), Amalaka and ghee. By this, the ailments like Pinasa

(Coryza) etc. get cured.

The soup of radish (Mulaka) and horse gram (Kulattha) is properly prepared. Along with this soup, the patient should take food preparations made of barley, wheat and rice depending suitability.

The patient should drink the upper portion of Varuni (a type of alcoholic drink) or water boiled with Panchamoola (Bilva, Shyonaka, Gambhari, Paatala and Agnimantha).

For food preparations, the water boiled with coriander and ginger or tamalaki or Parni chatustaya (Shalaparni, Prishnaparni, Mashaparni and Mudgaparni) is used.

Different types of sweating treatments for Rajayakshma:

Below, different types of Swedana - sweating treatments are explained.

Sankara type of Swedana is administered over throat, sides of the chest, chest and head

(vide) and for this purpose,

Krushara - thick gruel,

Utkarika - pudding and

Payasa (milk preparation boiled with black gram, horse gram and barley) is used.

Parisheka (sprinkling) type of Swedana is administered with

Patrabhanga (decoction of leaves having Vata alleviating properties) or

The lukewarm decoction of

Bala - Country mallow (root) - Sida cordifolia,

Guduchi - Tinospora cordifolia and

Madhuka- Licorice - Glycyrrhiza glabra.

Nadisveda is done on throat, head and sides of chest with

The head of the goat and fish or

The decoction of Vata balancing herbs.

For Nadi sveda these may also be used:

The meat of aquatic and semi- aquatic animals,

The decoction of Panchamul (bilva, Syonaka, Gambhari, Patali and Ganikarika),

Sneha (oil, ghee etc.) and

Aranala (sour Gruel)

Upanaha (hot ointment) is done if there is

Shiro ruja - headache,

Parshva shoola – pain in the sides of the chest and
Amsa shoola – shoulder pain

The following ingredients are used:

Jivanti – *Leptadenia reticulata*,

Shatapushpa – *Anethum sowa*

Bala – Country mallow (root) – *Sida cordifolia*,

Madhuka– Licorice – *Glycyrrhiza glabra*,

Vacha – *Acorus calamus* Linn

Veshavara – a non veg soup recipe

Vidari- *Ipomoea paniculata* / *Pueraria tuberosa*

Mulaka – *Raphanus sativus* and

Meat of aquatic as well as semi- aquatic animals sizzled and mixed with 4 types of Sneha (oil, ghee, muscle fat and bone marrow) is useful.

Recipes for external application:

The ingredients used: Paste of

Shatapushpa – *Anethum sowa*

Madhuka– Licorice – *Glycyrrhiza glabra*,

Kushta – *Saussurea lappa*,

Tagara – *Valeriana walichii* and

Chandana (Sandalwood – *Santalum album*) along with ghee

Cures:

Shiro ruja – headache and

Parshva amsa shoola – pain in the sides of the chest as well as shoulders

Praseka (external application of thick ointment):

Useful in the treatment of-

Shiro ruja – headache and

Parshva amsa shoola – pain in the sides of the chest as well as shoulders caused by the simultaneous vitiations of 2 Doshas.

Other combinations for paste application for headache, chest and shoulder pain –

1. Bala – Country mallow (root) – *Sida cordifolia*,

Rasna – *Alpinia galanga*, sesame seeds, ghee, Yashtimadhu and Blue Lily

(Neelotpala)

2. Palankasha (*Guggulu* (*Commifora mukul* Engl.),

Devadaru (*Cedrus deodara*),

Chandana (Sandalwood – *Santalum album*),

Kesara and Ghee

3. Veera,
Bala - Country mallow (root) - *Sida cordifolia*,
Vidari (*Ipomoea paniculata* / *Pueraria tuberosa*),
Krsnagandha and
Punarnava - *Boerhavia diffusa* and

4. Shatavari - *Asparagus racemosus*
Payasya - *Ipomoea paniculata*,
Ksheerakakoli - *Lilium polyphyllum*
Kattrna,
Madhuka- Licorice - *Glycyrrhiza glabra* and
Ghee

For these patients, Navana (Inhalation therapy), Dhumapana (smoking therapy), administration of Sneha (Ghee, etc) after the intake of food, massage with medicated oils and medicated enema (Basti) are useful.

Raktamokshana - Blood-letting Therapy, etc

The patient suffering from headache and pain in the sides of the chest as well as shoulders is administered blood-letting therapy with:

Srunga (Horn)
Alabu (gourd) and
Jalauka (leeches) or
Siravyadha - venesection

For such patients, Pradeha (external application of thick ointment) with the paste of
Padmaka - *Prunus cerasoides*

Ushira - Vetiver - *Vetiveria zizanioides* and
Chandana (Sandalwood - *Santalum album*) added with ghee or

The paste of
Durva (*Cynodon dactylon*),
Madhuka- Licorice - *Glycyrrhiza glabra*,
Manjistha - *Rubia cordifolia* and
Kesara mixed with ghee is useful.

Pralepana (application of ointment) of:

Prapaundarika (*Nymphaea lotus*) - red variety,
Nirgundi (*Vitex negundo*),
Padmakaesara,

Utpala (Nymphaea alba),
Kaseruka (Scripus grossus) and
Payasya – Impomoea paniculata with ghee is useful in this condition.

Massage with the help of:

Chandanandi taila and
Satadhauta ghrita is useful in this condition.
Pariseka (sprinkling of liquids) with:
Milk,
Decoction of Madhuka- Licorice – Glycyrrhiza glabra,
Cold rain- water or
The decoction of
Chandana (Sandalwood – Santalum album), etc. is useful in this condition.
Thus the alleviation therapies are described.

Panchakarma treatment for Rajyakshma

The patient suffering from Rajyakshma having excessively vitiated Doshas is given Snehana and Swedana therapies and thereafter, Vamana (emetic therapy) and virecana (purgation therapy) is administered.

The recipe for these therapies should contain Sneha (ghee, oil etc), and these recipes should not have depleting (Karsana) effect.

The patient of Rajyakshma will die if there are loose bowels. Therefore, the dose of these recipes is such, which a weak person can stand, and he should never be given a strong purgation.

Medicines and treatments for Rajyakshma:

After the Koshta (Gut) is cleaned of impurities by Vamana and Virechana, for the treatment of Kasa (cough), Svasa (Dyspnoea), headache and pain in the sides of the chest as well as shoulders, the following medicines are administered.

Nasya treatment to improve voice:

1. Nasya (nasal drops therapy) with the ghee boiled with
Bala – Country mallow (root) – Sida cordifolia
Vidari (Ipomoea paniculata / Pueraria tuberosa),
Ashwagandha – Winter Cherry / Indian ginseng (root) – Withania somnifera etc,
or
Vidari (Ipomoea paniculata / Pueraria tuberosa) and
Madhuka- Licorice – Glycyrrhiza glabra along with salt is excellent for the
promotion of voice.

2. Navana (a type of Nasya) of ghee boiled with Prapaundarika (*Nymphaea alba*) – red variety, Madhuka- Licorice – *Glycyrrhiza glabra*, Pippali – Long pepper fruit – *Piper longum*, Brihati – *Solanum indicum*, Bala – Country mallow (root) – *Sida cordifolia* and Milk is excellent for the promotion of voice. The above herbal ghee administered after food, relieves Shirashoola – headache Parshwashoola – flank pain Amsashoola – upper back pain Kasa – cough Shwasa – asthma, dyspnoea

Dashamoola Ghrita, Bala ghrita, Rasna Ghrita

Medicated ghee prepared by boiling with Bala – Country mallow (root) – *Sida cordifolia*, Decoction of Dashamula(*Bilva*, *Syonaka*, *Gambhari*, *Patali*, *Ganikarika*, *Salaparni*, *Prishnaparni* – *Uraria picta*, *Brihati* – *Solanum indicum*, *Kantakari* – *Solanum xanthocarpum* and *Goksura*) Milk and Meat soup is useful in the instantaneous cure of the above mentioned ailments. (headache, flanks pain, upper back pain, cough and asthma) 5. Besides, the intake of Rasna ghrita or Bala ghrita along with milk after food or during the course of food in a dose proportionate with the power of digestion of patient is also useful in the treatment of the above mentioned ailments.

Linctus (Leha) for cough, voice hoarseness, asthma etc.

Intake of ghee added with Kharjura – dates, Mrudvika – *Vitis vinifera* Sharkara – sugar Honey and Pippali – Long pepper fruit – *Piper longum* Cures: Vaisvaryya – Hoarseness of voice Kasa – cough Svasa – dyspnoea and Jvara – fever

The ghee which is collected freshly from the milk boiled with the Decoction of Dashamula is mixed with Pippali and honey.

This is an excellent recipe for the promotion of voice.

It also cures:

Shiro ruja – headache,

Parshva shoola and amsa shoola – pain in the sides of the chest as well as shoulders,

Kasa – cough,

Svasa – dyspnoea and

Jwara – fever.

Ghee is collected from the milk boiled with 5 varieties of Panchamool;

Brhat Panchamula (Bilva – *Aegle marmelos*, Syonaka, Gambhari – *Gmelina arborea*, Patali and Ganikarika),

Ksudrapanchamula (Shalaparni, Prishnaparni – *Uraria picta*, Brihati – *Solanum indicum*, Katakari – *Solanum xanthocarpum* and Goksura – *Tribulus terrestris*),

Trnapanchamula (Saraiksu, Darbha, Kasa and Sali),

Kantakapanchamula (Jivaka Rishabhaka – *Manilkara hexandra*, meda, Jivanti – *Leptadenia reticulata* and Shatavari – *Asparagus racemosus*) and

Vallipancamula (Punarnava – *Boerhavia diffusa*, Shalaparni, Prishnaparni – *Uraria picta*, Bala – Country mallow (root) – *Sida cordifolia* and Eranda – *Ricinus communis*)

This ghee (one part) is cooked by adding the decoction of 5 varieties of Panchamula (3 parts) and milk (1 part). This recipe cures all the 7 ailments of Rajayakshma.

The following 4 recipes, when taken in the form of linctus along with honey and he cures Kasa (cough), Svasa (Dyspnoea) and pain in the sides of the chest. They also promote voice.

1. Kharjura – *Phoenix dactylifera*

Pippali – Long pepper fruit – *Piper longum*,

Draksha – Raisin – *Vitis vinifera*,

Pathya – Haritaki

Karkatashrunji and

Duralabha – *Fagonia cretica*

2. Triphala (Haritaki, Bibhitaki and Amalaki)

Pippali – Long pepper fruit – *Piper longum*

Musta – Motha – *Cyperus rotundus*

Shringataka – Singhada / Shrungat

Guda – Jaggery

Sharkara – Sugar

3. Veera,
Shati - *Hedychium spicatum*
Puskaramula - *Inula racemosa*, Basil, jaggery and sugar

4. Nagara -
Chitraka - Leadwort - *Plumbago zeylanica*,
Laja,
Pippali - Long pepper fruit - *Piper longum*,
Amalaki - *Phyllanthus emblica* and
Jaggery.

Sitopaladi Churna

Ingredients:

16 parts of Sitapala (misri or sugar with big crystals),
8 parts of Tugaksheeri (bamboo salt)
4 parts of Pippali - Long pepper fruit - *Piper longum*,
2 parts of Bahula (*Bruhadela*) Greater cardamom and
1 part of Tvak is made to a powder.

This is mixed with honey and ghee, and given to the patient to lick.

Indicated in -

Svasa - dyspnoea

Kasa - cough

Kapha - phlegm

Suptajihva - numbness of the tongue, loss of sensation of taste and touch

Arocaka - anorexia

Alpagni - low power of digestion and

Parsvasula - pain in the sides of the chest

Treatment of Burning Sensation:

If there is burning sensation in hands, feet or in the body, and if there is fever and bleeding from the upper channels of the body, then the patient is given **Vasaghirta** or **Shatavari ghrita**.

Duralabhadi Ghrita:

1 pala of each of

Duralabha - *Fagonia cretica*

Svadamstra - *Tribulus terrestris*

4 varieties of Parni (*Salaparni*, *Prishnaparni* - *Uraria picta*, *Mashaparni* - *Teramnus*

labialis and Mudgaparni - Phaseolus trilobus),
Bala - Country mallow (root) - Sida cordifolia and
Parpataka - Fumaria parviflora is boiled by adding
10 times of ghee, i.e. the Prasthas of water and reduced to 1/10th.
Thereafter, the decoction is properly strained out.

To this in fine paste of

1 Karsha of each of

Sati - Hedychium spicatum

Puskaramula - Inula racemosa

Pippali - Long pepper fruit - Piper longum,

Trayamana - Gentiana kurroa

Tamalaki - Bhi Amla

Kiratatikta - Swertia chirata

Fruits of Kutaja - Connessi (Holarrhena antidysenterica Wall.) and

Sariva - Indian Sarsaparilla - Hemidesmus indicus is added.

Thereafter, 1 prastha of ghee and 2 Prasthas of milk are added and cooked.

This medicated ghee cures

Jvara (fever)

Daha (burning sensation)

Bhrama (Giddiness),

Kasa (cough)

Amsa ruja; Parshva ruja; shiro ruja - Pain in shoulders, sides of the chest and head

Trsna - morbid thirst),

Chardi - Vomiting and

Atisara - Diarrhoea.

Jivantyadi ghruta:

All these drugs is taken in equal quantity and made to a paste. Ghee is cooked along with this paste:

Jivanti - Leptadenia reticulata

Madhuka- Licorice - Glycyrrhiza glabra

Draksha - Raisin - Vitis vinifera,

Fruits of Kutaja - Connessi (Holarrhena antidysenterica Wall.),

Shati - Hedychium spicatum

Puskaramula - Inula racemosa

Vyaghri - Solanum surattense

Goksura - Tribulus terrestris

Bala - Abution indicum

Nilopala - Water lily

Tamalaki - Phyllanthus niruri

Tryamana - Gentiana kurroo

Duralabha - Fagonia cretica and

Pippali - Long pepper fruit - Piper longum

This excellent recipe of medicated ghee cures all the 11 signs and symptoms of this serious disease (tuberculosis) which is a conglomeration of several ailments.

Baladi Ksheera -

Bala - Sida cordifolia

Sthira - Desmodium gangeticum

Prishnaparni - Uraria picta

Brihati - Solanum indicum and

Nidigdhika - Solanum surattense is boiled, and a decoction is prepared.

To this decoction,

Cow's milk,

Nagara

Draksha - Raisin - Vitis vinifera,

Kharjura - Phoenix dactyfera

Ghee and

Pippali - Long pepper fruit - Piper longum is added and cooked.

Intake of this recipe along with honey cures

Jwara - fever and

Kasa - cough, and

Svayam - promotes voice.

While using this recipe, the patient should take goat- milk and the soup of meat of animals inhabiting arid zone. He should also take the Yusa (vegetable soup) of Canaka, mudga and Makustha.

TREATMENT OF EXCESSIVE PHLEGM:

If there is excessive expectoration of phlegm, if the patient is strong (i.e not too weak) and if is of Kapha Prakrti (constitution dominated by Kapha), then he is given emetic therapy with the following recipes:

1. Milk boiled with Madanaphala

2. Milk boiled with the decoction of Madhuyasti (Licorice) and

3. Yavagu (thick gruel) prepared by boiling with emetic drugs and added with ghee.

After the administration of the emetic therapy, and during the meal- time, the patient is given light diet which is prepared with such drugs as are stimulant of digestion like Sunthi.

Diet and Drinks for excessive Phlegm:

Intake of yava, Godhuma – wheat – *Triticum sativum*, Madhvika, Sidhu, Arista, Sura, Asava, meat of animals inhabiting arid zone and Shoolya type of Meat (meat roasted on a spike preparation overcomes kapha).

Role of Vata in Expectoration:

During excessive expectoration of Phlegm, it is Vata which stimulates the phlegm to come out. Therefore, a wise physician should treat such a condition (of expectation of phlegm) with the help of unctuous and hot remedies.

TREATMENT OF VOMITING:

Therapeutic measures described for the treatment of expectoration of phlegm is employed if there is vomiting [in the patient of tuberculosis]. To such a patient, diet and drinks which are Hrudya (useful for the heart), which alleviate Vata and which are light are given.

TREATMENT OF DIARRHOEA:

In the patient of tuberculosis, generally Agni (enzymes responsible for digestion and metabolism) is afflicted. This causes diarrhoea accompanied with mucus and Asyavairasa (distaste in the mouth). Such a patient does not relish any food. To such a patient, the following recipes which stimulate the power of digestion, which stop diarrhoea, which cleans the mouth and which counteract anorexia is administered:

1. Indrayava – *Wrightia tinctoria* with Nagara is mixed with Tandulambu (rice-wash) and the patient is given Yavagu (thick gruel) cooked along with Changeri – *Oxalis corniculata*, butter- milk and Dadima – Pomegranate – *Punica granatum*.
2. Patha – *Cyclea peltata*, Bilva – *Aegle marmelos* and Yavani – *Carum copticum* is mixed with butter milk. The patient should drink this potion.
3. Duralabha – *Fagonia cretica*, srngavera – *Zingiber officinale* and Patha – *Cyclea peltata* is taken along with Sura (a type of alcoholic drink) and
4. Pulp of the seeds of jambu – *Syzygium cumini* and Amra – mango – *Mangifera indica*, Bilva – *Aegle marmelos*, kapittha – *limonia acidissima* and Nagara are mixed with the Manda (upper portion) of Peya (thin gruel).

The above mentioned recipes cure diarrhea.

RECIPES OF KHADA

Leaves of Vetasa – *Garcinia pedunculata*, Arjuna (*terminalia arjuna*), Jambu – *Syzygium cumini*, Mrnali, Krsnagandha, Sriparni – *Gmelina arborea*, Madayanti – *Lawsonia inermis* and Yuthika – *Jasminum auriculatum* is mixed with Matulunga –

Citrus medica , Dhataki – Woodfordia fruticosa, Dadima – Pomegranate – Punica granatum, fats, sour ingredients and salt for preparing Khadas which are excellent for counteracting diarrhea.

Similarly, Khadas can be prepared of Changeri – Oxalis corniculata, Chukrika – Rumex vesicarius and Dugdika – Euphorbia thymifolia mixed with cream of curd, ghee and Dadima – Pomegranate – Punica granatum.

DIET AND DRINKS FOR DIARRHOEA

The soup of different types of meat which are light for digestion is mixed with astringent ingredients. These Vyanjanas (non- cereal side Dishes) along with red variety of Sali rice is useful in diarrhea.

The patient should drink water boiled with

Laghupanchamula (Shalaparni, Prishnaparni – Uraria picta, Brihati – Solanum indicum, Kantakari – Solanum xanthocarpum and Goksura – Tribulus terrestris),

Butter

Sura

Chukrika – Rumex vesicarius and

the juice of Dadima – Pomegranate – Punica granatum.

Thus medicines which are digestive stimulants and Grahi (constipative) for the patient of tuberculosis having Diarrhoea are described.

REGIME TO REMOVE DISTASTE IN MOUTH:

Now, hear the excellent measures for the removal of distaste in the mouth and for the promotion of the liking for food. These are as follows:

1. One should brush his teeth both the times (morning and evening) with the help of tooth- twigs and use Mukhadhavana (drugs to be chewed for correcting the aggravated Doshas in the mouth);

2. Similarly, he should wash the mouth and use Kavala Graha (keeping mouthful of drugs in thin paste from in the oral cavity) and

3. One should smoke (medicated cigars) and thereafter, take such drugs, food and drinks which are stimulant of take such drugs, food and drinks which are stimulant of digestion as well as carminative, which are useful and which are deliciously prepared.

Recipes for Mukha dhavana: Chewing:

The following 5 recipes are useful for Mukhadhavana (drugs to be chewed) for correcting the aggravated Doshas in the mouth:

1. Tvak - Cinnamomum zeylanica ,
Musta (Cyperus rotundus)
Ela (Elettaria cardamomum Maton) and
Dhanya
2. Musta - Cyperus rotundus,
Amalaka - Emblica officinalis, and
Tvak- Cinnamomum zeylanica
3. Darvi - Berberis aristata,
Tvak - Cinnamomum zeylanica and
Yavani - Carum copticum
4. Tejhva(Cavika) and
Pippali - Long pepper fruit - Piper longum
5. Yavani - Carum copticum and
Tintidika - Rhus parviflora

The above mentioned recipes can be prepared in the form of pills to be kept in mouth and sucked.

In the form of powder, these recipes can be used for the massage of gums and teeth for cleaning the mouth.

Mixed with water, the powder or paste of these recipes can be used as Kavalagraha (keeping mouthful of drugs in thin paste from in the oral cavity).

Other recipes for Kavalagraha- Oral rinse:

Ingredients to be used for Kavalagraha (keeping mouthful of drugs in thin paste form in the oral cavity) as per the liking of patient:

Sura - Alcohol
Madhvika,
Sidhu,
Oil,
Honey,
Ghee,
Milk and
Sugar cane juice.

Yavani Shadava Churna:

1 Karsha of each of
Yavani - Carum copticum,
Tintidika -Rhus parviflora,

Amlavetasa – *Garcinia pedunculata* Roxb,
Dadima – *Punica granatum* and
Badara – *Zizyphus jujuba* (sour variety),
1/2 Karsa of each of
Dhanya – *Oryza sativa*
Sauvaracala
Ajaji – *Nigella sativa* and
Varanga (Tvak),
100 Pippalis – *Piper longum*
200 fruits of Maricha – Black pepper fruit – *piper nigrum* and
4 Palas of Sarkara is made to a powder.

This recipe, when administered, cleanses the tongue.

It is cardiac tonic and it promotes relish for food.

It cures heart diseases, spleen disorders, pain in the sides of the chest, constipation, Anaha (flatulence) cough, Svasa (asthma), Grahani (Sprue syndrome) and Arsas (piles).

It is Grahi i.e it works as a constipative in a patient suffering from diarrhea.

Talisadi churna and Talisadi Gutika

Ingredients:

1 part Talisapatra – *Taxus baccata*,
2 parts Maricha – Black pepper fruit – *piper Nigrum*
3 parts Nagara – *Zingiber officinale*
4 parts Pippali – Long pepper fruit – *Piper longum*
1/2 Part Tvak – *Cinnamomum zeylanica*
1/2part Ela (*Elettaria cardamomum* Maton) and
32parts white sugar is made to a powder.
This powder, when administered, cures
Kasa – cough,
Svasa – Asthma and
Aruchi – Anorexia
Hrdroga – heart diseases
Pandua – Anemia
Grahanidosa – sprue syndrome
Shosha – depletion of body tissues.
Splenic disorders
Jwara – fever
Chardi – vomiting
Atisara – diarrhea
Colic pain

It is an excellent stimulant of digestion;

It causes downward movement of obstructed Vayu in the abdomen.

ADMINISTRATION OF MEAT

If the patient is emaciated and reduced of muscle, tissues, then he is given meat of carnivorous animals which are especially nourishing. This meat is suitably prepared by an expert acquainted with the method of such preparations.

Giving Carnivorous Meat in Disguise:

To the patient suffering from Shosha – wasting of body tissues, following types of meat is given to eat:

1. Meat of peacock
2. The meat of vultures, owls and blue- jays in the disguise of peacock meat, after preparing in a suitable manner according to the prescribed methods
3. The meat of crow in the disguise of the meat of partridge.
4. The meat of snakes in disguise of the meat of Varmi (an edible fish which is round and long in shape like a snake)
5. The fried meat of earth- worm in the disguise of the intestine of fish.
6. The meat of Lopaka (fox), Sthula Nakula(large mongoose), cat and cubs of jackal, properly dressed, in the disguise of the meat of rabbit
7. Similarly, the meat of lion, bear, hyena, tiger and such other carnivorous animals is given in the disguise of the meat of deer to promote the muscle tissues of the meat of deer to promote the muscle tissues of such patients and
8. The meat of elephant, rhinoceros and horse, well seasoned with spices is given in the disguise of buffalo meat for the promotion of muscle tissues of the patient.

Therapeutic Utility of Meat:

The meat of carnivorous animals, exceedingly promotes the muscle tissues of the patient.

Similarly, the meat of different types of deer and birds is useful for such patients because of its sharpness, heating effects and lightness.

Need for Disguising the Identity of Meat:

The meat of some animals, notwithstanding its utility for patients, is not considered edible in tradition. To enable the patient to take such meat without any reservation or hatred, such meats are administered in disguise.

If the patient comes to know the exact identity of such meat, then out of hatred he may not eat it. Even if he eats such meat out of compulsion, he may vomit it out.

Therefore, the meat of such animals is cooked properly and given to the patient in disguise, in the name of the meat which is edible traditionally.

Wholesome Meat:

The meat of peacock, partridge, cock, swan, hog, camel, ass, bull and buffalo is excellent for the promotion of muscle tissue.

Meat of different Groups of Animals:

The learned physician should examine the meat keeping the description made there in view and administer suitable meat to the patient suffering from depletion of body tissues.

To the patient, suffering from depletion of tissues caused by aggravated Vata , the meat of birds and animals belonging to the categories of Prasaha (animals and birds who eat by snatching), Bhusaya (animals who live in burrows on the earth) Anupa (animals inhabiting marshy land), Varija (aquatic animals) and Varicara(birds moving in the water) should be given in appropriate quantity to eat.

To the patient, suffering from depletion of tissues caused by aggravated Kapha and Pitta, the meat of birds and animals belonging to the categories of Pratuda (pecker birds), Viskira (Gallinacious birds) and Dhanvaja (animals dwelling in arid (zone) is administered.

Specific Utility of Meat and Alcohol:

Depletion of tissues does not remain for a long time in the patient who eats meat, who drinks Madhvika (a type of alcoholic drink) and who is strong minded.

PREVENTION OF TUBERCULOSIS:

Tuberculosis will not be able to find entry into the body of a person who regularly takes Varunimanda (upper portion of the Varuni type of alcoholic drink) and who attends to the manifested natural urges (of defecation, urination, etc).

Alcoholic drinks as Anupana:

After taking meat, Anupana (postprandial drink) used are

Prasanna

Varuni

Sidhu

Arista

Asava or

Madhvika type's alcoholic drinks, depending upon their suitability.

Therapeutic Utility of Alcoholic Drinks

Madya (alcoholic drinks) is Twwkshna (sharp), Ushna (hot) Vishada (non- slimy) and Sooksma (which can penetrate subtle channels) in its property. Therefore, it is

capable of forcefully and quickly opening the orifices of srotas (channels of circulation) as a result of which 7 categories of tissue element set proper nourishment.

Recipes of Medicated Ghee:

The following recipes are administered to the patient suffering from muscle wasting:

1. Ghee, boiled with the soup of the meat of carnivorous animals, is given along with honey
2. Ghee boiled with 10 times of milk
3. Ghee, cooked with the decoction of Dashamula (bilva -Aegle marmelos , syonaka, Gambhari – Gmelina arborea, Patali, Ganikarika, salaparni, Prsniaparni, Brihati - Solanum indicum, Kantakari - Solanum surratense and Goksura – Tribulus terrestris), milk, meat soup and the paste of drugs belonging to Madhura gana (Jivaniya Gana), is excellent in depletion of body tissues.
4. Ghee, cooked with milk (4 times of ghee) and the paste of Pippali - Long pepper fruit - Piper longum, Pippalimula, Chavya - Piper retrofractum, Chitraka - Leadword - Plumbago zeylanica, Nagara and Yavaksara, is excellent for cleansing the channels of circulation and
5. Ghee cooked with milk and the paste of Rasna, Bala, Goksura, Sthira - Desmodium gangeticum and Varsabhu and added with Jivanti - Leptadenia reticulata as well as Pippali - Long pepper fruit - Piper longum cures depletion of body tissues.

All the above mentioned recipes of medicated ghee is given in appropriated dose along with Yavagu (thick gruel) or these are to be mixed with honey and administered in the form of a linctus or these are to be given to the patient along with food. Thus the food and drinks for the patient suffering from depletion of body tissues are described.

EXTERNAL THERAPIES:

Hereafter, remedies for external use will be described. The patient should take bath in a tub (Kostha) containing Sneha (oil, ghee, etc), milk or water. These medicated baths help in the opening up of the obstructed channels of circulation and promote strength. After finishing the bath, the patient is given a gentle massage after smearing his body with ghee and oil, mixed together. Thereafter, the patient should sit leisurely and unction (Utsadana) is applied all over his body] [173-175]

Recipes for Unction - Utsadana

All these drugs are made to a powder, and to this, three times of the powder of barley is added:

Jivanti - Leptadenia reticulata,

Satavirya

Vikasa (manjistha) – *Rubia cordifolia*

Punarnava – *Boerhavia diffusa*

Ashwagandha – Winter Cherry / Indian ginseng (root) – *Withania somnifera*,

Apamarga – *Achyranthes aspera*

Tarkari (Jaya)

Madhuka- Licorice – *Glycyrrhiza glabra*

Bala – Country mallow (root) – *Sida cordifolia*

Vidari (*Ipomoea paniculata* / *Pueraria tuberosa*),

Sarsapa – *Brassica campestris*

Kushta – *Saussurea lappa*,

Tandula

Fruits of atasi – *Linum usitaissimum*

Masha

Tila – Sesame (*Sesamum indicum*) and

Kina (material used for fermenting)

This should then be mixed with curd and honey in small quantity and used for unction which promotes nourishment, complexion and strength.

Recipe for Medicated bath:

The patient of depletion of tissues is bathed with warm or cold water depending upon the nature of the season. This water is boiled with drugs belonging to Jivaniya gana. Before taking bath, his body is rubbed with the paste of white mustard seed or fragrant drugs

REGIME:

The patient of depletion of tissues should apply perfume, wear garlands, [beautiful] garments and ornaments, touch auspicious objects, offer prayer to the Gods, physicians and Brahmins, and thereafter, he should take food and drinks which are of agreeable colour, taste, touch and smell. The food and drinks is consumed leisurely. These ingredients of food and drinks is agreeable or is mixed with other agreeable articles.

Wholesome Corns and Cereals

The patients suffering from depletion of body tissues should take corns and cereals which were harvested before one year, which are appropriately cooked, which are light, which are not devoid of potency, which are tasteful and which are of good smell.

Such of the ingredients of food and drinks, which are invigorating, are wholesome

for the patient. Wholesome diet and drinks which are to be described in the chapter dealing with the treatment of Ksatasina (Chikitsa 11) is given and muscle tissue.

Useful Regime:

Rajyakshma – the king diseases, gets cured by Abhyanga, Utsadana, wearing of new and pleasant garment, taking medicated bath in consonance with the temperature of the season, external cleansing, using medicated enema, taking milk, ghee, meat and food mixed with meat soup, drinking agreeable alcoholic preparations, applying pleasing perfumes, observing friendly and beautiful ladies, hearing vocal and instrumental music, hearing invigorating and consulting talks, paying regular prayers to preceptors, observing celibacy, giving donations, performing penance, offering prayers to the Gods, speaking the truth, maintaining good conduct, performing auspicious and non-violent activities and showing respect to physicians and learned Brahmins.

Performance of Yajna:

The patient desirous of regaining his health should perform the Yajna (Sacrificial ceremony) enjoined by the Vedas, by the performance of which the disease tuberculosis was cured in the days of the yore.

TO SUM UP

This article illustrates the incidence, cause, signs, symptoms, pathophysiology, prognosis, diagnosis and treatment options for the disease **tuberculosis** in general medicine as well as in Ayurveda.

We hope the above given information generates the much needed awareness and makes the reader better equipped to face the malady head on.