

## GASTRO INTESTINAL TUBERCULOSIS W.S.R. TO KOSHTHA GATA RAJYAKSHMA

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### ABSTRACT

Tuberculosis is one of the world's major health problems. According to WHO India has world's largest tuberculosis epidemic, cause may lie into over crowded population, lack of health education, poverty (only 1.5 million patients under govt. care get free treatment). Tuberculosis can involve any organ in human body. Gastro intestinal tuberculosis is the 6<sup>th</sup> most frequent form of extra pulmonary site. Tuberculosis bacteria reaches the gastrointestinal tract via haematogenous spread, ingestion of infected sputum or from infected contiguous lymph nodes. The gross pathology is characterised by transverse ulcer, fibrosis, thickening and stricturing of bowel wall, enlarged and matted mesenteric lymph nodes, omental thickening and peritoneal tubercles. Clinically it may present in acute, chronic, and acute on chronic form. Most commonly illiocecal region involvement is seen in gastrointestinal tuberculosis. Illiocecal and small bowel tuberculosis presents with palpable mass or complication of obstruction, perforation or malabsorption, stricture. Dysphagia, ondynophagia, gastric outlet obstruction in gastro duodenal involvement. Haematochezia, lower abdominal pain due to colonic tuberculosis. Annular rectal stricture, multiple perianal fistulas in rectal involvement. Tuberculosis may be compared with *Rajyakshma* on the basis of *lakshana* (like *kasa*, *pratishaya*, *chardi*, *raktavamana* etc), mode of transmission, pathogenesis or *samprapti*; according to *Charaka* (*Charakasamhita*, *nidan sthana-6* chap.) as well as by *Sushruta* in his *soshapratishedhaadhyaya*. Though there is no clear-cut description of gastrointestinal type. But in *AstangaHridaya*, *Vagbhat* put some light on this aspect. He divided *rajyakshma* in various forms according to clinical features.

**Keywords:** tuberculosis, gastrointestinal, *rajyakshma*, *astangahridaya*.

### INTRODUCTION

Tuberculosis is a specific infectious disease caused by *Mycobacterium tuberculosis*. The disease primarily affects lungs and causes pulmonary tuberculosis. It can also affect intestine, meninges, bones and joints, lymph glands, skin and other tissue of the body. The disease is usually chronic with varying clinical manifestation.

Tuberculosis can involve any part of the gastrointestinal tract from mouth to anas. Gastrointestinal tuberculosis is most common in developing country. In India and Nepal 10 % of gastro intestinal obstruction is caused by gastrointestinal tuberculosis.<sup>1</sup> It is the 6<sup>th</sup> most common type of tuberculosis after lymphatic,

genitourinary, skeletal, millary, and meningeal tuberculosis.<sup>2</sup>

In developing countries it is frequently seen that HIV is generally associated with extra pulmonary TB. The clinical presentation of extra pulmonary TB in case of HIV over musk the clinical sign and symptoms of TB and make it difficult to diagnose.

Gastrointestinal tuberculosis can mimic a variety of other abdominal condition, that's why diagnosis of gastrointestinal tuberculosis may delay or missed, resulting in high morbidity and mortality.

In *Ayurveda*, *Rajyakshma* is a condition which is very similar to Tuberculosis. But there is no clear view regarding gastrointestinal tuberculosis, except *Vagbhat* in *AstangaHridaya*, Chapter-5. He divided 11 vital symptoms of *rajyakshma* into four classifications according to regional involvement of *dosa*, i.e. *urdhavaga*, *koshta*, *tirjak*, *sandhigata*.<sup>3</sup>

#### **Pathophysiology & Samprapti:**

Abdominal tuberculosis can occur primarily or secondary to other tubercular focus in the body. About 70-78% cases of abdominal tuberculosis are gastrointestinal type.<sup>4</sup> The cause of gastro-intestinal tuberculosis is due to ingestion of raw milk infected by *M. bovis* stain, results in primary gastro-intestinal TB, and which is very rare now a days.

Most of the infection is caused by *M.tuberculosis* in following ways:

- Swallowing of infected sputum in active pulmonary TB.
- Haematogenous spread from an active pulmonary TB focus.
- Lymphatic spread from infected node.
- Spread from an adjacent infected organ.

Low immune condition is an important trigger factor for developing tuberculosis. Good immune response of body can limit the spread of tuberculosis which hinders the development of extra pulmonary TB as well as gastrointestinal TB from primary progressive TB.

The organism crosses the mucosa and lodge in the sub mucosa and inflammatory response takes place and results in granuloma formation. This inflammatory response also helps in development of sub mucosal and

serosal thickening, oedema, and lymphatic hyperplasia, mucosal ulceration occurs due to end arteries and thickening of bowel wall is due to post inflammatory fibroblastic reaction.

Gastrointestinal TB established by the previously stated mechanism and develops two variety<sup>5</sup>

- a) Ulcerative Variety
- b) Ulcerohypertrophic Variety

Gastrointestinal TB commonly effects iliocecal region due to physiological stasis, abundant lymphoid tissue, minimal digestive activity and increase fluid and electrolyte absorption.<sup>6</sup>

In *Ayurveda Acharyas* gives a special importance to *Ojakshaya*, *Dhatukshaya*, improper diet and faulty life style for development of *Rajyakshama*. The factors like *साहस*, *वेगसंधारण*, *क्षय*, *विषमाशन* these causes aggravation of *vata*. This aggravated *vata* vitiates *pitta* and *kapha*, then these *pitta* and *kapha* spreads all over the body and causes *Srotabarodha* or dilates *srotas*. This leads to *dhatukshaya*. *AcharyaSushruta* gives two main mechanisms in the production of this disease:<sup>7</sup>

- **AnulomaKshaya:** Due to obstruction of *srotas* by *kapha* predominant *tridosha* which impairs the production of next *dhatu*.
- **PratilomaKshaya:** Due to *sukrakshaya* by *maithuna*, this causes gradual *kshaya* of previous *dhatu*.

#### **Clinical features:**

In gastrointestinal TB about 75% cases shows ileum and cecal involvement, apart from this oesophagus, stomach, ascending colon, sigmoid colon, duodenum, jejunum, appendix and rectum involvement are seen. Clinical features depend on the site and the types of involvement.

Iliocecal TB: colicky abdominal pain, vomiting, obstruction due to narrowing of lumen by hyperplastic-cecal TB or by adhesions, lump may be felt at right iliac fossa, malabsorption due to decreased absorptive surface by ulceration or involvement of lymphatic or by bacterial overgrowth in stagnant loop. Perforation (5-9% intestinal perforation in India is due to TB), diarrhoea, gradual weight loss.

Segmental colonic: colonic involvement except illio-cecal region. Presents with pain Haematochezia, bleeding, fever, anorexia etc.

Rectal and anal TB: Haematochezia, constipation, high frequency of rectal bleeding, fistula, ischiorectal abscess.

Oesophageal TB: Presenting with fever, dysphagia, odynophagia, retrosternal discomfort or pain, rarely complicated with broncho oesophageal fistula, hematemesis.

Gastro duodenal TB: Gastric outlet obstruction, obstructive jaundice (due to compression of common

bile duct), dyspepsia, duodenal ulcer, hematemesis, fistula (pyeloduodenal or duodeno cutaneous).<sup>8</sup>

In *Ayurveda*:

*Vagbhata* in *AstangaHridaya* stated *kosthagatara-rajyaksma* and clarify its symptoms like *विड्भ्रंस (atisara)*, *विड्शोष (malabaddhata)*, *च्छर्दि*

Apart from this *AcharyaCharaka* and *Sushruta* gives an overall description of *rajaykshma* according to their *nidana*, severity and *sadhyasadhyata*.

*AcharyaCharaka* divides *rajaykshama* according to their *nidana* which are presenting with different *lakshanas*.<sup>9</sup>

**Table 1: Lakshanas of rajaykshma according to Charaka.**

<i>Sahasika</i>	<i>Vegavidharanaja</i>	<i>Kshayaja</i>	<i>Vishamashanaja</i>
<i>Sirasula</i>	<i>Sirasula</i>	<i>Sirasula</i>	<i>Sirasula</i>
<i>Kanthodhvamsa</i>	<i>Amsavamarda</i>	<i>Amsatapa</i>	<i>Amsatapa</i>
<i>Kasha</i>	<i>Kasha</i>	<i>Kasha</i>	<i>Kasha</i>
<i>Savarabheda</i>	<i>Savarabheda</i>	<i>Svarakshaya</i>	<i>Savarabheda</i>
<i>Arochaka</i>	<i>Arochaka</i>	<i>Arochaka</i>	<i>Arochaka</i>
<i>Parshvashula</i>	<i>Parshvashula</i>	<i>Parshvashula</i>	<i>Parshvashula</i>
<i>Atisara</i>	<i>Atisara</i>	<i>Atisara</i>	<i>Raktavamana</i>
<i>Jrimbha</i>	<i>Angamarda</i>	<i>Angamarda</i>	<i>Praseka</i>
<i>Jwara</i>	<i>Jwara</i>	<i>Jwara</i>	<i>Jwara</i>
<i>Urashula</i>	<i>Pratishyaya</i>	<i>Pratishyaya</i>	<i>Pratishyaya</i>
<i>Raktavamana</i>	<i>Vamana</i>	<i>Swasa</i>	<i>Vamana</i>

He also includes *mala samrakshana* in the treatment protocol of *rajaykshma*, as *malakshaya* in *rajaykshma* leads to *anulomakshaya* of *dhatus* which causes the *ojakshaya* also.<sup>10</sup>

*AcharyaSushruta* also gives 4 main factors producing *rajaykshma* अथ, वेगावरोध, आघात, विषमाशन these factors vitiates *kaphapradhantridosha* which produces *rajaykshma*.<sup>11</sup>

He divides *lakshana* of *rajaykshmain* his *Sosa pratishedhaadhaya* (41<sup>st</sup> chapter, *uttartantra*) in three categories 6, 11 and 3 according to severity and *sadhyasadhyata*.

6 Symptoms are *Aruchi*, *jwara*, *swasa*, *kasa*, *raktasthivana*, *swarabheda*.

11 symptoms are divided according to *doshic* predominance.

**Table 2: 11 symptoms of rajaykshma according to Sushruta**

<i>Dosha</i>	<i>Lakshana</i>
<i>Vata</i>	<i>Swarabheda, Shula, AmsaParshvaSamkocha</i>
<i>Pitta</i>	<i>Jwara, Daha, Atisara, Raktasthivana</i>
<i>Kapha</i>	<i>Siraparipurnata, Aruchi, Kasa, Kanthadhamsha</i>

And he uses 3 *lakshana* (*jwara, kasa, raktavamana*) as *asadhyalakshana*. As well as he described *क्षीण, अतिसार, उदर, वृषणशोथ* as *asadhya lakshana*.<sup>12</sup>

## DISCUSSION

पीनसश्वासकासांसमूर्द्धस्वररुजोऽरुचिः I  
ऊर्ध्वविड्भ्रंशसंशोषावधच्छर्दिश्चकोष्ठगे II  
तिर्यकत्थेषार्श्वरुग्दोषो, सन्धिगेभवतिज्वरः I  
रुपाण्येकादशौतानिजायन्तेराजयक्ष्मिणः II (As. Hri. Chi- 5/13, 14)

Peenashaswaskasamsamurdhaswararujaaruchi  
Urdhavidbhramshasamshosavadhamcchardish-  
chakosthage

Tiryakastheparswarugdosho, sandhigebhavatijwara  
Rupanyekadashoutanijayanterajyakshina

(pInasaSvaasakaasaaMsamUrdhaswararUjoaruchiH  
UrdhvviDbhraMSasMshoShaavadhaMcChardish-  
chakoShThage  
tiryakatthehaarshvarugdoSho, sandhigebhavatijwaraH  
rupaaNyekaadashoutaanijaayanterajyakshmiNH)

*Peenasa, swasa, kasa, amsaruja, siraruja, aruchi* are the symptoms of *urdhagatarajyakshma*, whereas *vidbhramsa (Atisara), vid sosha (mala baddhata)* and *chardi* are the symptoms of *kosthagatarajyakshma*; *parswasula* is the symptom of *tiryakrajyakshma* and *jwara* is the symptom of *sandhigatarajyakshma*, these are the 11 symptoms of *rajyakshma*.

So from the above *sloka AcharyaVagbhata* tries to differentiate *rajyakshma* according to the site of involvement. He clearly mentioned *kosthagatarajyakshma* which is different from other types.

‘*Kostha*’ comes from the word *kushyadhatu* which means *Avarana*. According to *Bhavprakashamashaya, pakvasaya, agnasaya, mootrashaya, rudhirasaya, unduka, puspa* is called as *kostha*. If we go through the synonyms of *kostha* we get *mahasrota, amasaya, pakwasaya, sariramadhya*. *AcharyaSushruta* considered the site of *ama&agni, mootrashaya, rudhirashaya, hridaya, unduka, and phuppusa* as *kostha*. In the definition of *kosthaCharaka* mentioned *mahasrota* (largest channel of the body),

*shareeraMadhya*, also he considered *amashaya & pakwashaya* as the major component of *kostha*.<sup>13, 14</sup>

In *chikitsa* point of view *kosthaparikshana* is a very important factor. According to *kostha (krura, mridu, madhayam)* we can prescribe the suitable drug for treatment.

So according to various *Acharyas* gastrointestinal system/alimentary tract is the major component of *kostha*. And if we go through the above *sloka vidbhramsha (atisara), vid sosha (malabaddha), chardi* (vomiting) are the symptoms of gastrointestinal system.

## CONCLUSION

In gastrointestinal TB malabsorption, weight loss, fistula, hematemesis, haematochezia and rectal bleeding are commonly seen because ulceration of mucosa causes loss of absorptive area. Other symptoms like diarrhea, constipation and vomiting are quite similar to the symptoms of *kosthagatarajyakshma*. Because of *Anuloma* and *Pratilomakshaya* of *dhatu*. *AcharyaCharaka* has given an extra importance to *mala samrakshana* as *mala* contains unabsorbed nutrients.

So, from the above discussion as we can see that there is lack of literary sources regarding gastrointestinal tuberculosis to correlate it with *kosthagatarajyakshma*. That’s why we need more study to clarify *kosthagatarajyakshma* and establish standard diagnostic and treatment protocol according to *Ayurveda*.

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