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 lies into over crowed 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 6th 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(likekasa, pratishaya, chardi, raktaevamaetae), 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 affects 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 anus. Gastrointestinal tuberculosis is most common in developing country. In India and Nepal 10 % of gastro intestinal obstruction is caused by gastrointestinal tuberculosis.¹ It is the 6th most common type of tuberculosis after lymphatic,
genitourinary, skeletal, milliary, and meningeal tuberculosis.\(^2\)

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, Rajayakshma 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 rajaykshma into four classifications according to regional involvement of dosa, i.e. urdhvavaga, kosta, tirjak, sandhigata.\(^3\)

**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.\(^4\) 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 mucosaland 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\(^5\)

a) Ulcerative Variety
b) Ulcero hypertrophic Variety

Gastrointestinal TB commonly effects iliococcal region due to physiological stasis, abundant lymphoid tissue, minimal digestive activity and increase fluid and electrolyte absorption.\(^6\)

In Ayurveda Acharyas gives a special importance to Ojakshaya, Dhatukshaya, improper diet and faulty life style for development of Rajaykshama. The factors like साहस, वेगसंधारण, अग्र, वियमाशन 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:\(^7\)

- **AnulomaKshaya**: Due to obstruction of srotas by *kapha* predominant tridosha which impairs the production of next dhatus.
- **PratilomaKshaya**: Due to *sukrakshaya* by *mai-thuna*, 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.

Iliococcal 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 illo-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). In Ayurveda: Vagbhata in Astanga Hridaya stated kosthagatarajyakshma and clarify its symptoms like विष्रंग्ण (atisara), विष्रोष (malabaddha). Apart from this Acharya Charaka and Sushruta gives an overall description of rajyakshma according to their nidana, severity and sadhyasadhyata. Acharya Charaka divides rajyakshma according to their nidana which are presenting with different lakshanas.

<table>
<thead>
<tr>
<th>Table 1: Lakshanas of rajyakshma according to Charaka.</th>
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<tbody>
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<td>Sahasika</td>
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<td>Sirasula</td>
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<td>Kanthodhvamsa</td>
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<td>Kash</td>
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<td>Savarabheda</td>
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<td>Arochaka</td>
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<td>Parshvashula</td>
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<td>Aritisara</td>
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<td>Jrimbha</td>
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<td>Jwara</td>
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<tr>
<td>Urashula</td>
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<tr>
<td>Raktavamana</td>
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</table>

Sahasika and Vegavidharanaja Kshayaja Vishamashanaja
Sirasula Sirasula Sirasula Sirasula
Kanthodhvamsa Amsavamarda Amsatapa Amsatapa
Kash Kash Kash Kash
Savarabheda Savarabheda Svarakshaya Savarabheda
Arochaka Arochaka Arochaka Arochaka
Parshvashula Parshvashula Parshvashula Parshvashula
Aritisara Aritisara Aritisara Raktabhamana
Jrimbha Angamarda Angamarda Prasekha
Jwara Jwara Jwara Jwara
Urashula Pratishyaya Pratishyaya Pratishyaya
Raktavamana Vamana Swasa Vamana

He also includes mala samrakshana in the treatment protocol of rajyakshma, as malakshaya in rajyakshma leads to anulomakhaya of dhatus which causes the ojakshaya also.
Acharya Sushrutsalso gives 4 main factors producing rajyakshma वर, वेगावरोध, आघात, निदान these factors vitiates kaphapradhantridosha which produces rajyakshma.

Table 2: 11 symptoms of rajyakshma according to Sushruts
<table>
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<th>Dosh</th>
<th>Lakshana</th>
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<tbody>
<tr>
<td>Vata</td>
<td>Swarabheda, Shula, AmsaParshvaSamkocha</td>
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<tr>
<td>Pitta</td>
<td>Jwara, Daha, Atisara, Raktastrivana</td>
</tr>
<tr>
<td>Kapha</td>
<td>Siraparipurnata, Aruchi, Kasa, Kanthadhamsha</td>
</tr>
</tbody>
</table>

He divides lakshana of rajyakshma in his Sosa pratishedhaadhaya (41st chapter, uttartantra) in three catagories 6, 11 and 3 according to severity and sadhyasadhyata. 6 Symptoms are Aruchi, jwara, swasa, kasa, raktastrivana, swarabheda. 11 symptoms are divided according to doshic predominance.
And he uses 3 lakshana (jvara, kasa, raktabamana) as asadhyalakshana. As well as he described श्न्रीण, अतिगार, उदर. वृषन्योथा, asasadhyalakshana. 12

DISCUSSION

पीणस्माजाकास्ममंतःस्वरूपस्त्रोजलक्षणः I
उद्भवित्वमांशोधोपव्यवस्थितोदछवणुस्त्रोजङ्गे II
tिर्यक्षेपार्थतर्द्वयोः, साधिगेभवतिन्द्रः II
रथण्येकाक्शोतितज्ञायतेराजाधिशििण: II (As. Hri. Chi- 5/13, 14)

Peenashwasasamsamurdhaswararuriaruuchi
Urdhavidbhranemasamshosavadhamcchardish-chakosthage
Tiryakstheparswarugdosho, sandhigebhavatijwara
Rupanyekadashoutaniyanterajayakshina

(pNasaSvaaakaasaasMsamUrdhaswararUjoaruchiH
UrdhvviiDbhraMSasMshoShaavadhaMcChardish-
chakoShThage
tiryakattheparswarugdosho, sandhigebhavatijwaraH
rupaaNyekadashoutaniyanterajayakShmiNH)

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 Bhavprakashamahashaya, pakvasaya, agnasaya, mootrashaya, rudhirasaya, unduka,puspa is called as kostha. If we go through the synonyms of kostha we get mahasrota, amasaya, pakwasaya, sariramadhy.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. 13, 14

In chikitsa point of view kostharprikshana 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 slokavidbhramsa (atisara), vid sosha (malabaddhata), 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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