

OJAKSHYA: A NOVEL ON RAJAYAKSHMA**Archana Moharana^{1*}, Dipak Swain², Santilata Sahoo³ and Snehamayee Mishra⁴**

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ABSTRACT

Tuberculosis is an infectious disease caused by bacteria, primarily transmitted from person to person through the inhalation of air droplets carrying these pathogens. While tuberculosis commonly affects the lungs, it can also target various other organs within the human body. Importantly, infection with the tuberculosis bacterium doesn't invariably result in full-blown disease. The human immune defense system has the remarkable capacity to restrain and control these pathogens. As a consequence, the progression to active disease occurs in only a fraction of cases, affecting roughly 10% of adults.

However, tuberculosis has the potential to lie dormant within the body, with the ability to reactivate at any time, even decades later,

particularly when the individual's immune system is compromised or if left untreated. Tuberculosis remains a life-threatening illness, contributing to a significant global health burden. The World Health Organization (WHO) estimates that on a daily basis, approximately 20,000 individuals develop tuberculosis, and sadly, 5,000 people succumb to this disease.

Developing countries shoulder the heaviest burden when it comes to tuberculosis. Although the introduction of chemotherapy during the latter half of the last century brought hope for a cure, the emergence of drug-resistant tuberculosis has posed a formidable challenge. This challenge is exacerbated by the susceptibility of individuals to low immune modulatory events.

Now here is this concern more pronounced than in India, a major contributor to the high tuberculosis burden among 22 affected countries. Despite the availability of modern diagnostic techniques and treatment modalities for tuberculosis, the disease remains inadequately controlled in India due to its large and densely populated regions.

Hence, the need for novel, safe, and affordable immunomodulators to complement existing treatment strategies becomes evident. Such interventions have the potential to not only enhance the body's defenses against tuberculosis but also address the complications that may arise due to low immunomodulatory events. This pursuit for innovative solutions in the realm of immunomodulation holds great promise in the ongoing battle against tuberculosis, particularly in countries like India.

INTRODUCTION

“If I had tuberculosis... this idea formerly terrifying, no longer makes any one tremble.... antibiotics have appeared, sanatoria have disappeared as far as public is concerned, the problem is solved, the disease has been conquered”

International Union against Tuberculosis, January 1962.

The declaration made three decades ago is an overstatement even today. Since time immemorial, Tuberculosis has been a scourge to mankind. It is a complex socio-economic problem that impedes human development. Although Tuberculosis as a disease is of great public health importance in India yet in the developed world also, there has been a resurgence of the disease in recent past. Infact, the threat of HIV/AIDS alerted them to this potential danger. This is inspite of the fact that the causative organism was discovered more than 100 years ago and highly effective drugs and vaccines are available since 1952. But this chemotherapy like other chemotherapies besides being expensive is not excluded from the evils of side effects. Its injudicious use i.e., without confirming the disease and in the dose higher than the recommended dose has increased the chances of side effects like hepatotoxicity, ototoxicity, nephrotoxicity, gastro- intestinal disturbances etc. that can lead to treatment failure as well as drug resistance. Treatment failures are greater threat than just the tuberculosis patients and Multi Drug Resistance Tuberculosis has already assumed phenomenal proportions not sparing children.

Even after the adequate treatment and defeat of the bacteria the immune mechanism of the body remains at low functional level and that can act as a predisposing factor for many other infectious disease and Tuberculosis itself.

In spite of these drawbacks, chemotherapy is a necessity for combating the disease and cannot be avoided. Therefore, now the time has come for evaluation of adjuvant therapy in such type of diseases. Adjuvant means, that which assists especially a drug added to a prescription to hasten or increase the action of the drug. Therefore, for the management of Tuberculosis an adjuvant therapy besides increasing the action of anti-tubercular drugs must compensate for the side effects of the chemotherapy, acts as an immuno – modular as well as should have anti-tubercular action. With the help of immuno-modulating and anti-tubercular action of the adjuvant therapy the dose and duration of chemotherapeutic agents can be reduced. That in turn will reduce the side effects of the anti-tubercular drugs as well as make the treatment more cost-effective.

Although immunotherapy was one of the major aims of many workers in prechemotherapy days but at that time they were battling against enormous bacillary and antigenic loads, considerably reducing their chances of success. Due to limited success in their attempt, it is difficult to assess that accurately in retrospect or to draw conclusions from it of relevance to today's problems. Therefore, cost-effective and easily available adjuvant therapy is the need of today.

For fulfilling these lacunae of modern medicine, the medical world has directed its attention towards Ayurveda with great hope and definitely Ayurveda has a golden treasure of natural ways of healing and a vast pharmacopoeia of Rasayana drugs that can provide such an effective adjuvant therapy. Keeping the wellbeing of humanity as chief concern, if the best of two pathies are combined, without making much chaos about the purity of science, an effective and successful national programme can be implemented for control of Tuberculosis.

Rajayakshma is a disease described in all Ayurvedic classics that can be compared with Tuberculosis. Our Acharyas have described all the aspects of the disease very minutely. The management aspect of the disease is also dealt with equal perfection. Ayurvedic drugs without taking consent of the patients as it needs extensive research to establish their anti-tubercular action.

The most vulnerable group to Tuberculosis is infants, children and adolescents, as this age group is associated with diminished resistance to tuberculosis. In addition, the occurrence of communicable diseases like measles and whooping cough in infants and young children lead to higher incidence of Tuberculous disease in them. Also, with urbanization of the population there is decline in the breast-feeding and failure of lactation, which leads to increased incidence of under nutrition, Marasmus and Kwashiorkor.

Samhita period

The Samhita period is known as the golden period of Ayurveda. Due to extensive advancement in the field of Ayurveda. A great deal of knowledge about the disease is seen through the classical texts written during this period.

Charaka samhita

Acharya Charaka has given a wide description of the disease by giving its definition, various etiological factors and their role in manifestation of the disease. A full fledged prodromata, complete clinical picture with possible stages and grouping of symptoms as Trirupa, Shadrupa and Ekadasharupa Rajayakshma; the bad prognostic symptomatology of the disease along with an excellent management protocol for different clinical manifestations has been discussed in details in two separate chapters- one in Nidana Sthana (Ch.Chi.8) and other in Chikitsa Sthana (Ch.Chi 8). Besides these, Arishta Lakshnas of the disease have also been mentioned at various place in Indriya Sthana (Ch.Ind, 5&6).

Sushruta samhita

Acharya Sushruta has described this entity under the term 'Shosha'. He has mentioned eight types of Shosha (Su.Ut. 41/21) for the first time. He has advised the use of Rasayana for the management of Shosha. He is also the first to declare the contagious nature of the disease along with the modes of transmission of such disease (Su.Ni. 5/33,34).

Kashyapa samhita

Kashyapa Samhita is the only available classical text of Kaumarabhritya. In this Samhita a separate chapter on the management of Rajayakshma has been given but it is not complete. In the available part a few yogas including Pippali Vardhaman Yoga, Nagbala Rasayan, Indrani Ghrita etc. are given.

Astanga sangraha

Acharya Vagbhata has described the disease by combining the views of both Acharya Charaka and Acharya Sushruta. The role of Gati of Doshas in the manifestation of various symptoms has also been clearly mentioned in this text(As.Sa.Ni.5).

Madhava nidana

Madhava Acharya seems to follow Acharya Sushruta.

Medieval period

The later authors of Ayurveda have followed the Madhava Nidana for describing the Nidana aspect of the disease without much addition with a few exceptions. But in the management aspect the addition of Rasadravyas was definitely a further step in the history of the disease, which was started since 12th century. Dalhana in this commentary has given a hint of this disease being a hereditary one. Bhavaprakash, Yogaratnakar and other later works have described a large number of combinations to combat the disease.

Nirukti

Rajayakshma is composed of two words viz. Raja and Yakshma. The word Raja is derived from Dhatu 'Raj' meaning 'Deeptau' which means the person who rules. Yakshma is an adjective of noun Yakshmana derived from Dhatu 'Yakshm' and possessing 'Manin' Pratyaya. It indicates the disease, which is to be treated with utmost care by the physician. Amarkosha has mentioned this as Roga-bheda and Vachaspathyam quotes it as a synonym of Rajayakshma (Bhattacharya, 1962).

Vyupatti

अनेकरोगानुगती बहुरोगपुरोगमः ।
राजयक्ष्मा क्षयः शोषो रोगराडिति च स्मृतः ॥ A.H.Ni. 5/1

अनेकरोगानुगती बहुरोगपुरोगमः ।
दुर्विज्ञेयो दुर्निवारः शोषो व्याधिर्महाबलः ॥ S.S.Utt. 41/3

As indicated in above quotes the word 'rajayakshma' carries two literary meanings along with it viz. King's evil and King of the disease. The prior one is exemplified by the story of Chandra and accordingly termed as the disease of the King. The latter one indicates towards its severity, as it is very difficult to manage so termed as Rajayakshma, the king of the disease.

Paryaya

Krodha, Yakshma, Jwara (Ch.Chi.8/1) Shosha, Kshaya (Su.Ut.41/4) and Rogarat (As.Hr.Ni. 5/1) are the synonyms of Rajayakshma.

Paribhasha

Acharya Charaka says that due to obstruction in the Rasavahi srotas the rasa Dhatu gets accumulated at its own place and this accumulated Rasa Dhatu goes upwards and manifests as Kasa and other clinical symptoms. As a consequence of this Shadrupa and Ekadasharupa are produced and the group of these clinical symptoms as a whole is known as “Rajayakshma”.

According to Acharya Sushruta Shosha is a disease that is followed by many disease as its complications and manifests as a complication of many disease. It is very difficult to diagnose and treat.

Bheda

(A) On the basis of etiological factors – Chakrapani opines that according to the etiological factors Rajayakshma can be classified into 4 types.

1. Sahasaja Rajayakshma
2. Sandharanaja Rajayakshma
3. Kshayaja Rajayakshma
4. Vishmashanaja Rajayakshma

(B) On the basis of Dosha predominance- Almost all Acharyas are of the view that Rajayakshma is Sannipataja i.e. there is dominance of all the three doshas. But a few Acharyas says that it is of 5 types-

1. Vataja Rajayakshma
2. Pittaja Rajayakshma
3. Shleshmaja Rajayakshma
4. Sannipataja Rajayakshma
5. Urahkshataja Rajayakshma

(C) On the basis of chemical features- According to the clinical picture of the disease it has been classified into 3 types viz.

1. Trirupa Rajayakshma
2. Shadrupa Rajayakshma
3. Ekadasharupa Rajayakshma

But chakrapani opines that these are the three different stages of Rajayakshma.

(D) On the basis of Pathogenesis- According to Acharya Charaka and Sushruta, rajayakshma manifests through two probable ways and these can be considered as two types of Rajayakshma viz.

1. Anuloma Kshaya
2. Pratiloma Kshaya

Nidana

After going through all the classics, it is found that there are four major causes of Rajayakshma that can cause the disease singly or combinedly. These are-

1. Sahasa
2. Vega sandharana
3. Kshaya
4. Vishamashana

Kshaya – Kshaya means depletions or discretion. Acharya Sushruta has described it as the synonym of ‘Shosha’ and explains that the loss of capability of body to do work is called Kshaya (Su.Ut.41/4). Gangadhar comments that in Rajayakshma it refers to depletion of Rasa Dhatu and Shukra while Yogindranath says that it refers to depletion of Shukra, Oja and Sneha. This may be because Rasa and Oja are taken as synonyms.

According to both Acharya Charaka (Ch.Ni.6/8-9) and Acharya Sushruta (Su.Ut. 41/10) this depletion of Dhatus can take place by two ways that can be termed as (i) Anuloma Kshaya and (ii) Pratiloma kshaya.

Anuloma Kshaya means the depletion of Dhatus takes place in the direction of their nourishment i.e. Rasa then Rakta then Mamsa and so on. Pratiloma Kshaya means the depletion of Dhatus takes place in the direction opposite to their nourishment i.e. Shukra then Majja then Asthi and so on.

In infants and children only Anuloma Kshaya can take place. The conditions that can lead to Anuloma Kshaya, according to Acharya Charaka, Can be divided into 2 categories i.e. Psychological like Bhaya, Shoka, Chinta, Udvega etc. that is not of much significance in case of children and nutritional like intake of Ruksha Ahara i.e. those food articles which when ingested lead to depletion of Dhatus by increasing Vata Dosha, inspite of giving nourishment

to the body; intake of less quantity of food, fasting and weak body constitution as in low birth weight babies.

Acharya Charaka and Sushruta have mentioned two probable ways of manifestation of the disease viz. Anuloma Kshaya and Pratiloma Kshaya. But here we will only discuss about Anuloma Kshaya because Pratiloma Kshaya hardly occur in children indulgence of etiological factors lead to Dosha provocation which get spread all over the body.

Acharya Vagbhata has described the process of obstruction in the Srotamsi with some more details. According to him, all the three provoked Doshas get circulated throughout the body and when they enter various Sharira, Sandhis, they affect the Siras of Sandhis leading to obstruction of the orifices of Srotamsi, resulting in the dilatation of the Srotamsi. Thereafter these Doshas move upwards, downwards and obliquely and produce various symptoms depending upon their localization (As. San. Ni-5/7-8)

Madhava Nidana has followed Acharya Sushruta while describing the Samprapti of Rajayakshma. Vijayarakshita while commenting on these verses says that in addition to depletion of Dhatus the vitiation of Srotamsi is also important, otherwise it may be only Dhatu kshaya and not Rajayakshma. It is not only the Rasavaha srotas but other Srotamsi are also get obstructed by provoked Kapha leading to Anuloma Kshaya.

In short, we can say that the two main entities of Samprapti of Rajayakshma are the vitiation of Doshas and vitiation of Agni. As we know that in children all the Dhatus are in their growing phase and not fully mature therefore, if in addition there is Agnimandya due to vitiated Doshas that will affect the growth and development of a child severely leading to high morbidity. Therefore, it becomes pertinent to arrest the pathology of Rajayakshma in children as soon as possible.

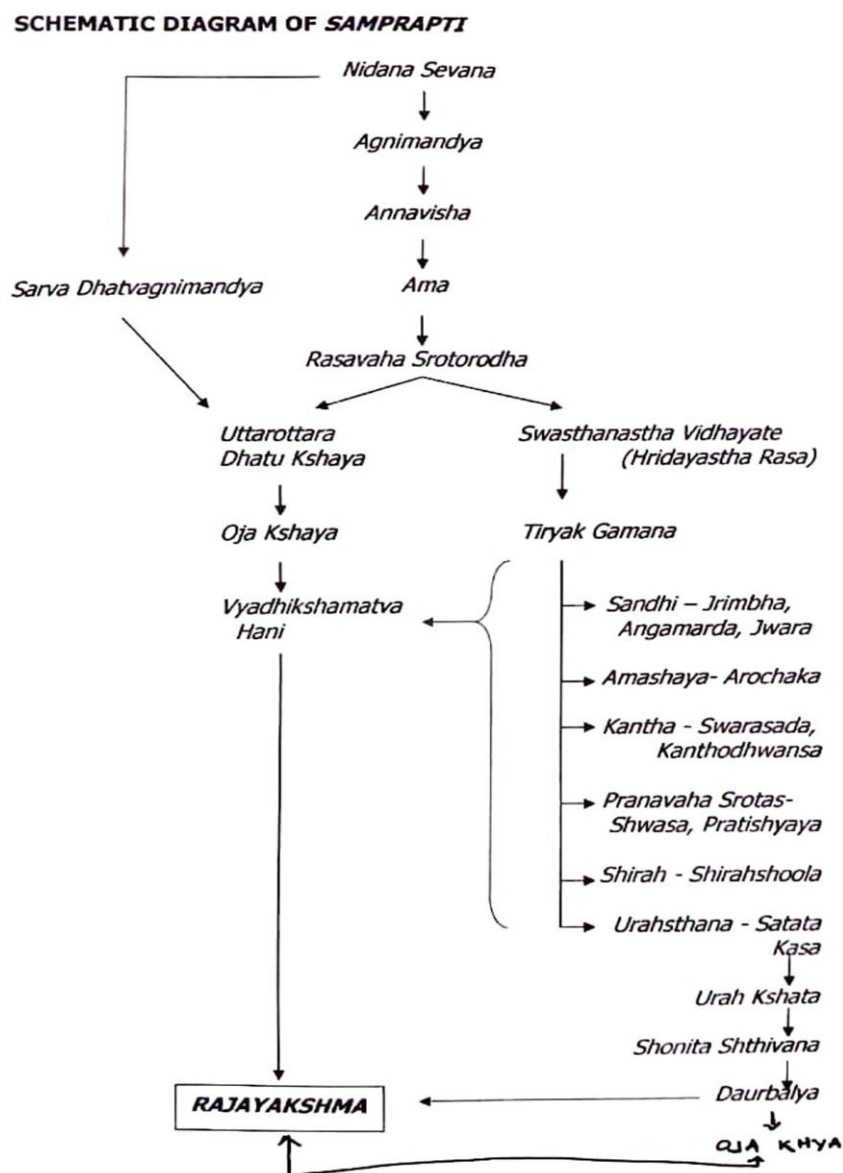
Kshayaja rajayakshma

The manifestation of Rajayakshma by Kshaya takes place by two different pathways according to the direction in which depletion of Dhatus takes place. These are Anuloma Kshaya and Pratiloma Kshaya as described earlier. Here we will discuss about anuloma Kshaya only due to its preponderance in childhood.

Anuloma kshaya

When a Durabala Prakriti person i.e. who is weak since birth (Ch. Ni. 6/8, Gangadhar) indulges in the etiologic factors, it leads to depletion of Rasa residing in Hridaya. According to Gangadhar, Hridaya here refers to Manasa Sthana (Ch. Ni. 6/8, Gangadhar). The rasa is the sara of Annarasa and is Tajjasa in nature (Ch. Ni. 6/8, Jyotishchandra). It is Dhatu Swaroopa and provides nourishment to other Dhatus (Ch. Ni. 6/8, Chakrapani). Due to its unavailability next Dhatu get depleted (Ch. Ni. 65/8, Gangadhar). This leads to cachexia as a result of depletion of all Dhatus (Ch. Ni. 6/8, Jyotishchandra). If this condition is not treated it ultimately results into Rajayakshma.

Samprapti



Rupa of rajayakshma according to etiological factors					
Sl no	Rupa	Sahasaja	Sandharnaja	Kshayaja	Vishama-ashanaja
1	Jwara	+	+	+	+
2	Swarasada	+	+	+	+
3	Pratishyaya	+	+	+	+
4	Shirahshoola	+	+	+	+
5	Kasa	+	+	+	+
6	Kanthodhwansa	+	+	+	+
7	Angamarda	+		+	+
8	Arochaka	+		+	+
9	Shawasa	+	+	+	
10	Shonitashthivana	+		+	+
11	Daurbalya	+		+	+
12	Varchobheda	+	+		+
13	Parshwashoola		+	+	+
14	Ansavamarda		+	+	
15	Jrimbha	+			
16	Uroroga	+			
17	Shoola		+		
18	Purisha upashoshanam		+		

Rasayana therapy

The word '*Rasayana*' refers to nutrient '*Rasa*' and its transportation in the body to nourish and replenish the other *Dhatus*. The process covers the nutrient fraction and its subsequent metabolic transformation and transportation under the influence of different *Agnis* of the body. Therefore, in Rajayakshma, Rasayana therapy plays an important role. Besides nourishing the *Dhatus* it prevents further damage by making the tissue strong enough not to allow any invasion of the disease. *Acharya Sushruta* has described the use of *Rasayana* when the disease is approaching at untreatable stage (Su. Ut. 41/56). He has further prescribed the use of *Rasona*, *Nagabala*, *Pippali* and *shilajeet* with appropriate method (Su.Ut. 41/59). All these *Rasayana* drugs except *Shilajeet* are also mentioned in *Kashyapa Samhita* along with *Aja Rasayana* (Ka.Rajayakshma Chikitsa). *Vagbhata* has also described *Rasayana* as the best treatment to combat this king of diseases (As.sa.Chi. 7/108).

The term *Rasayana* was also used for *Parada* and its preparations. These preparations were also largely used in the management of *Rajayakshma* in later period.

CONCLUSION

Rajayakshma stands as a prime example of a condition that traverses the intricate pathways of Ayurveda's Madhyama rogamarga. Being a tridoshaja Vyadhi, it predominantly involves the

Vata and Kapha doshas, weaving a complex tapestry of pathogenesis. In the journey through a series of Kshaya, where all seven Dhatus are intricately involved, the manifestation of Rajayakshma unravels.

Amidst this multifaceted tapestry of Ayurveda, one factor emerges as a key player, Oja. Oja, often referred to as the vital essence, takes center stage in the primary complex and the Arista Lakshyana of Rajayakshma. It signifies the vitality of the body, reflecting the harmony of the Dhatus, and its depletion underscores the gravity of the disease.

The concept of "MALA BALAM," as described by Chakradutta, sheds light on the interplay of factors that impact the seven Dhatus involved in Rajayakshma. These factors are not isolated but interwoven, highlighting the intricate nature of this condition. As Chakradutta eloquently states, "Nachā sarbani sarberani byadhi kshyamatway samarthani bhabanti," emphasizing the need to consider the holistic perspective when addressing Rajayakshma.

Understanding the nuanced involvement of Sahasa, Vegadharana, Kshaya, and Vishamasana is pivotal in comprehending the diverse symptoms that Rajayakshma presents. The depletion of the Dhatus is not a singular event but a complex interplay of factors that demand a holistic approach to diagnosis and treatment.

In this intricate mosaic of Rajayakshma, Oja takes the spotlight once again, underscoring its vital role in the management of this condition. Recognizing the vitality and importance of Ojas, it becomes evident that Rajayakshma demands a multifaceted approach, addressing not only the visible symptoms but also the underlying factors that lead to Oja depletion.

As Ayurveda continues to offer holistic insights into health and disease, Rajayakshma emerges as a captivating subject of study. For those delving into the realm of Ayurveda, especially post-graduate students, Rajayakshma encapsulates the depth of Ayurvedic knowledge, where ancient wisdom and modern science converge.

In conclusion, Rajayakshma serves as a poignant reminder of the intricate balance that Ayurveda seeks to establish in the human body. It is a condition where Doshas, Dhatus, and Agni harmonize in a delicate interplay. As students of Ayurveda, we are entrusted with the responsibility of unraveling this complexity and offering holistic solutions.

The journey through the texts of Ayurveda leads us to a profound understanding of Rajayakshma and its diverse manifestations. It invites us to explore the intricacies of Oja, the vitality that underpins health, and the factors that impact it. Rajayakshma beckons us to embrace a holistic approach to healing, one that considers not only the symptoms but also the subtle imbalances within.

In this pursuit, Rajayakshma becomes not just a medical condition but a profound exploration of Ayurveda's timeless wisdom. It is a reminder that the health and well-being of individuals are intricately woven into the fabric of nature and the universe. As we conclude our journey through Rajayakshma, we are left with a deep appreciation for the holistic principles that guide Ayurveda and a commitment to carry this wisdom forward into the future of medicine.

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