

## AN OBSERVATIONAL STUDY ON CHATURVIDHA NIDANA OF RAJAYAKSHMA WITH SPECIAL REFERENCE TO PULMONARY TUBERCULOSIS

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### ABSTRACT

**Objective:** To study the concept of *Chaturvidha Nidana* of *Rajayakshma* as per literature, To study the concept of *Chaturvidha Nidana* with modern correlation and to evaluate clinical incidence of *Chaturvidha Nidana* in Pulmonary Tuberculosis **Methods:** It is an observational clinical study where 50 patients diagnosed of Pulmonary Tuberculosis was selected. Patients were examined clinically and a detailed history was taken with a designed questioner to evaluate incidence of *Chaturvidha Nidana*. **Assessment Criteria:** Designed questionnaire based on the descriptions of *Chaturvidha Nidana* as explained in the literature. Four sets of questionnaire were prepared to evaluate each of the four *ChaturvidhaNidana*. As the four *Nidana* described in the *Samhita* (*Sahasa, Sandharana, Kshaya and Vishamashana*) is a common phenomenon in day today life, a demarcation from physiological and pathological degree of indulgence was necessary to evaluate its role in the genesis of *Rajayakshma*. To achieve this, each question was graded from 0 to 3 (Never, rarely, occasionally, very frequent), based on the frequency/degree of their indulgence and a total score for each *Nidana* was calculated .A total score percentage above 50 was taken as a strong indicator as a *Nidana*. **Results and Conclusions:** It was found that combinations of multiple *Nidana* are more prevalent clinically in comparison to single *Nidana*. *Sahasa, Vishamashana* and *Kshaya* was seen the most prevalent *Nidana*, single handedly or in combination. The incidence of *Vegasandharana* is not significant in this study. Contrary to the description of *Nidana* with its specific *Lakshana Samuchaya* in the literature, a definite relation between them could not be established with this study.

**Keywords:***Rajayakshma, Chaturvidha Nidana, Sahasa, Sandharana, Kshaya, Vishamashana*

### INTRODUCTION

Tuberculosis is one of the most ancient diseases known to mankind, with molecular evidence dating back up to 17,000 years. The disease has rather evolved with the human race over centuries. The incidence of tuberculosis grew progressively during the middle ages

and renaissance and has peaked between the end of the 18th and 19th century.

In the west, for long the disease was believed to be hereditary, as it developed in the members of the same family. Hippocrates describes it as a hereditary disease in Book 1 of his "Of the Epidemic".

In the 18<sup>th</sup> century it was even considered to be a disease of high status, referring to it as the "Romantic disease". The disease began to represent spiritual purity and wealth leading many fashion-conscious young, upper-class women to starve and purposefully whiten their skin to achieve the consumptive appearance. It was believed that tuberculosis aided artistic talent, due to a large number of famous artists who got affected. The total reality of the disease was only known when Robert Koch isolated the organism and proved its contagious nature.

In contrary to this, in India the disease was well understood from the *Vedic* period. *Atharva Veda* when explaining the etiology of *Yakshma/ Rajayakshma* describes *Krimi* (pathogenic organisms) as a causative agent<sup>1</sup>. *Ayurveda* had clearly documented the disease entity *Rajayakshma*, describing in detail its etiopathology, prognosis and treatment. The contagious nature of the disease was well known, explaining its route of spread in the form of a mythological story, where the disease came out from the king *Daksha* during expiration<sup>2</sup> (Droplet infection).

When scanning through the literature, it can be seen that the contagious nature of the disease was well known. Instead of stressing on the contiguity, various lifestyle factors were described as the etiology. More importance was given to identify the lifestyle and dietary errors which predisposed the infection rather than the infectious agent.

The principle with which our *Acharya* approached the disease was proved right when the advent of AIDS surged the incidence of Tuberculosis with more AIDS patients falling prey for *Mycobacterium*.

In spite of newer modalities for diagnosis and treatment of tuberculosis, unfortunately, its incidences are growing and people are still suffering. With the dawn of Multidrug resistant tuberculosis cases, it is

high time to evaluate the etiological factors coined in the classics in par with the current lifestyle.

This study has been taken up to analyze the *Chaturvidha Nidana*<sup>3</sup> explained in the classics and to clinically evaluate its role in the genesis of pulmonary tuberculosis.

#### OBJECTIVE:

1. To study the concept of *Chaturvidha Nidana* of *Rajayakshma* as per literature.
2. To study the concept of *Chaturvidha Nidana* with modern correlation.
3. To evaluate clinical incidence of *Chaturvidha Nidana* in Pulmonary Tuberculosis

#### METHODS:

It is an observational clinical study where 50 patients diagnosed of Pulmonary Tuberculosis was selected. Patients were examined clinically and a detailed history was taken with a designed questioner to evaluate incidence of *Chaturvidha Nidana*.

#### RESULTS AND DISCUSSIONS

The etiology of *Rajayakshma* is segregated into *Sahasa, Sandharana, Kshaya and Vishamashana* by almost all the *Acharya*. It is extremely interesting that these four terms incorporates almost all the prevalent lifestyle heckles of the current day. *Acharya* has segregated *Kshaya* into *Anuloma* and *Pratiloma* mentioning separate *Samprapti* and *LakshanaSamuchayaas* for each *Nidana*. It indicates that each of the *Nidana* are single handedly capable of leading into the disease based on its magnitude.

But, in the present day scenario, due to drastic shift in the work pattern and job culture, it is rather a collaboration of multiple *Nidana* which causes the disease.

#### SAHASA:

*Ayathabalamarambha/Balavadvighraha*<sup>7</sup> means excessive and strenuous activity beyond one's own capacity. It could be *Kayika, Vachika or Manasika*. *Urakshata*<sup>4</sup> is the major pathology in *Sahasa Nimittaja Rajayakshma*. In olden days, chances of *Urakshata*

occurring due to *Sahasa* would have been a common phenomenon. Unlike today, an autocratic system of governance was in practice and a good proportion of populations were exposed to mechanical stress in the form of wars, defense training or as a result of social oppression. This socio-economic setup which prevailed in those days could have been strong enough to form the '*SahasaNidana*' one handedly leading to a *Samprapti*. It is also worth considering that the better managements of trauma as well as development of antimicrobial agents in the prevailing western medicine have reduced the risk of both acute and chronic infections. In the current day scenario, it is incomplete to relate *Sahasa* to *Urakshatha* and a direct traumatic injury. In a broader sense indirect injuries to the chest should also be taken into consideration. *Acharya Charaka's* mentioning of excessive speaking as *Sahasa* points in this direction. Pulmonary contusive injuries are proved to have localized and systemic immunosuppression. Excessive physical exertion, both acute and chronic results in large scale suppression of cellular and humoral immunity. These phases of immunosuppression can open doors for infections. The motto of the current competitive world is to "push you beyond your limits" which itself is *Sahasa* in concise i.e. work disproportionate to capability (physical/ mental).

In the normal course of life, each and every person indulges in *Sahasa* in one or the other form. This *Sahasa* done on routine basis does not lead into pathology, hence is within the physiological limit of exertion. In the current study, about 76% of the total sample had indulged in *Sahasa* above this statistically fixed physiological limit. Among 76%, 10% were in the severe grade of *Sahasa*. In 8% of the sample, *Sahasa* is the only significant *Nidana* elicited. In 12%, *Sahasa* along with *Kshaya* is identified as *Nidana*. In 28%, *Sahasa* along with *Vishamashana* has been identified. In 28%, *Sahasa* along with *Kshaya* and *Vishamashana* is identified as the etiology.

These results signify that, *Sahasa* alone leading to *Rajayakshma* is not a common clinical entity contrary to the classical description. This has to be due to the

change in working patterns in relation to the older era. More than one *Nidana* co-exists in patients who have *Sahasa* as a significant etiology.

#### **VEGASANDHARANA:**

It is a common practice to withhold natural urges to certain extent. Mostly due to ignorance, inadequate toileting facilities or may be due to the demand of the situation. The practice is more common in working females and with certain jobs. The reason why people indulge in *Vegasandharana* are explained by *Acharya Charak's* as; *Paratantryath* (dependency on others), *Avaisharadyath* (lack of knowledge regarding its health implications) and *Satatamupacharat* (due to over concern about the work). Even though these practices are seen more commonly in females, it can be applied in general to the whole population. *Vegasandharana* is a widely described *Nidana* throughout the classics. Persistent withholding of urges could lead to reabsorption of waste products inducing azotemia and immunosuppression.

In this study, no substantial result was attained to establish *Vegasandharana* as an important *Nidana* in the manifestation of *Rajayakshma*. All the patients enrolled had indulged in *Vegasandharana* but was not statistically significant to establish its role in the etiology. *Vegasandharana* could have been a supplementing factor but not a primary *Nidana* as per this study. But, it cannot be concluded with this sample size and a history taking based assessment.

#### **KSHAYA:**

*Kshaya* means depletion. It is the synonym of '*Shosha*' and explains that the loss of capability of body to do work is called *Kshaya*<sup>7</sup>. *Kshaya* as a *Nidana* of *Rajayakshma* refers to *Dhatukshaya*. *Dhatukshaya* refers to '*Sara Kshaya*'<sup>8</sup>. The mode of manifestation of *Dhatukshaya* is by two means; *AnulomaKshaya*<sup>2</sup> and *PratilomaKshaya*<sup>10</sup>. A conglomeration of four factors results in *Kshayaja Rajayakshma*. viz, *Maanasika Karana* (excessive mental stress), *Krishna* (emaciated by malnutrition), *Anahara/Alpahara* (still having inadequate Ahara), *Durbala Prakruthi* (Genetic susceptibility) and *Ativyaavaya* (excess sexual activity). The genetic susceptibility of Tuberculosis is

pronounced as 'Durbala Prakruti'. 'Krisha' explains chronic debilitating disorders like AIDS, diabetes mellitus, Anemia etc which naturally is a cause for pathogenic invasions due to the lowered body defense systems.

*Pratiloma Kshaya* is portrayed as a separate entity within *Kshaya Rajayakshma*. *Pratiloma Kshaya* is due to excess elimination of a formed *Dhatu*, *Shukra* due to irrational sexual practices resulting in a state of need of excess formation. When such over utilization prevails for a long time it results in *Dhatukshaya*

This study reveals that, 54% of the total sample had indulged in statistically significant *Kshaya*. In 6% of the sample, *Kshaya* have been identified as a single *Nidana*. In 8% of the sample *Kshaya* along with *Vishamashana* is identified as the *Nidana*. In 12% of the sample, *Kshaya* along with *Sahasa* is identified as the *Nidana*. In 28% of the sample, *Kshaya* along with *sahasa* and *Vishamashana* is identified as the *Nidana*. Around 54% of the patients were afflicted by *Rajayakshma* by the influence of *Kshaya*. Hence, *Kshaya* has a significant role in the genesis of *Rajayakshma*. But its significance as a sole causative agent in the genesis is insignificant. Only a 6% of the patients were affected by *Kshaya* as a sole factor for *Rajayakshma*. Another 48% of the patients were suffers of *Rajayakshma* as other causes of *Rajayakshma* were also involved such as *Sahasa* and *Vishamashana*. Hence, its relevance took an importance when other causes of *Rajayakshma* acted upon.

Another important cause of *Rajayakshma* is chronic debilitating disease. In the exclusion criteria of the study, it was decided to exclude Diabetes mellitus and AIDS. Incidence of tuberculosis is high with Diabetes mellitus and AIDS, as there is lowered immune status. Hence, if they are considered into the study, there may be a bias in understanding *ChaturvidhaNidana*.

#### **VISHAMASHANA:**

The food which we consume should nourish the body as well as should uphold the health. Hence a balanced diet should be taken in adequate quantity at proper timing of the day is essential. The concept of balanced

diet can be seen hidden among the principles of *AshtaAharaVisheshayatanas*<sup>11</sup> and *DwadashaAshana Pravichara*. These rules of consuming food had ensured that a typical Indian meal is an amalgamation of adequate nutrients to immune system. Modification of the quality of the food according to one's need based on health as well as disease is also important. Consuming the balanced diet in less or more quantity at untimely is considered as *Vishamashana*. *Vishamashana* has two distinct deleterious effects on the body. As the quality and quantity is compromised by an individual, the ingested food will not nourish the body sufficiently results in *Dhatukshaya*. At the same time without the due consideration of once own requirement as per the health and consumption of the food untimely results in *TridoshaPrakopa*. In the run of time people have lost these principles and are highly westernized in their food habits. Due to the present day work culture and professional goals, the Indian culture of eating is no more being followed and our people are almost ignorant of that knowledge.

In this study, 70% of the total sample had indulged in statistically significant *Vishamashana*. In 6% of the sample, *Vishamashana* have been identified as a single *Nidana*. In 8% of the sample *Kshaya* along with *Vishamashana* is identified as the *Nidana*. In 28% of the sample, *Vishamashana* along with *sahasa* is identified as the *Nidana*. In 28% of the sample, *Vishamashana* along with *Sahasa* and *Kshaya* is identified as the *Nidana*.

The relevance of *Vishamashana* in the genesis of the disease is observed in most cases. But, there is no significant role as an individual factor in the genesis of illness. Its significance increases in association with the other causative factors such as *Sahasa* and *Kshaya*

#### **CONCLUSION**

Clinically in the current day practice, single handed *Nidana* seems less common and combinations of two or more factors are more prevalent. This has to be due to the change in work culture and dietary habits from the *Samhita Kala* to the current day.

*Sahasa* is found as one of the most prominent etiology as per this study. Incidences of *Vachika* and *Manasika Sahasa* are of equal importance in the current day scenario in comparison to *Kayika Sahasa*.

*Sandharana* is identified as an etiology. The evidence of *Sandharana* leading to *Rajayakshama* is less compelling in the setting of this study. *Sandharana* could have acted as a contributing factor in the etiopathogenesis.

A conglomeration of multiple factors results in *Kshayaja Rajayakshma*. Genetic, nutritional, psychological factors, Chronic debilitating diseases and irrational sexual practices collectively influences the metabolic activity resulting in *Dhatukshaya*. The role of psychological stress and nutrition in maintaining the immunity is well proved and aptly explains *Kshaya* and its pathological implications.

*Vishamashana* is an important etiology in this study and in combination with *Sahasa* forms a statistically significant etiology. Lack of knowledge regarding dietetics or inability to consume due to socio-economic conditions was the most common cause for inadequate nutrition.

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