A STUDY ON VISHAMA JVARA NIDANA W.S.R TO RISK FACTORS IN MALARIAL FEVER

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INTRODUCTION

Acharya Charaka introduces Jvāra(fever) as a disease entity causing Deha-Indriya-Manas-Santapā(increased temperature of body, impairment of sensory functions and mind) and as Sarvarogaagraga¹ (supreme of all diseases). The Prabhava(characteristic features)of Jvāra(fever) has been stated as Santapā(elevated body temperature), Aruchi(loss of appetite), Thrisna(excessive thirst), Angamardā(bodyache), Hridivyatha(preCORDIAL discomfort), Janmadonidana²(present during birth and death). Vishama Jvāra(irregular or intermittent fever) is often correlated to Malarial fever by various authors of present era.

Malarial fever is a febrile illness caused by hemoprotozoa of the genus Plasmodium. It is a protozoan disease transmitted by the bite of infected Anopheles mosquitoes. It is characterized by periodic fever, splenomegaly, haemolytic anaemia and a recurrent and chronic course. The Plasmodium affecting man are Plasmodium vivax, Plasmodium falciparum, Plasmodium ovale, Plasmodium malariae and they produce benign tertian, malignant tertian, ovale tertian and quartan malaria respectively³.

The pattern of irregular onset, inconsistent symptoms, appearance in irregular time and varying duration as ex-
plained by Vagbhata in the context of Vishama Jvara(irregular or intermittent fever)\textsuperscript{4}, the impairment of Dhatu(tissue elements of the body)as mentioned by Charaka Samhita\textsuperscript{5} or the Agantuja Nidana(external factors) by Sushruta Samhita\textsuperscript{a} are all pointing to the direction of Vishama Jvara(irregular or intermittent fever)resemblance to Malaria.

Going through various literatures available, it would be possible to identify some of the possible Jvara Nidanas (etiological factors for fever) which acts as risk factors in the genesis of malarial fever. The following literary findings will be attempted to be justified with the help of an observational study conducted on 25 patients and probable conclusions drawn out of it.

**Materials and methods:** 25 diagnosed Patients of Vishama Jvara(irregular or intermittent fever)positive for malarial fever were identified for the study. Nidana(etiological factors) were assessed on the basis of detailed case proforma.

**Samanya Nidana for Jvara(general etiological factors for fever):** Acharya Sushruta mentions in his chapter on Jvara(fever), the Samanya Nidana\textsuperscript{7}(general etiological factor)for all Jvara (fever). This type of a description is not available in the text book of Charaka Samhita.

The various factors associated with the causative factor for Jvara(fever) include Mityayoga and Atiyoga of Panchakarma (improper use of Panchakarma), traumatic encounter with Sastra, Kashta(weapons, wooden tools etc), Over exertion, Dhatukshaya(depletion of Dhatu), Ajeerna(indigestion), Visha(mineral toxicity, vegetative toxicity and toxic end products of the body) etc, Prapakatha (after an inflammatory process), Asatmya sevana (injudicious use of diet), Mitya Ahara- Vihara Sevana (improper dietary habits), changes in Ritu (seasonal changes), due to the smell of Vishayukta Oushadi Pushpa (allergic response to drug sand pollens), when engaged in sorrows, or due to the fault in the stars and Graha, Improper delivery in women, Abhichara Karma (unholy deeds – incantations)or due to curse of Devata, Guru (God, teachers) etc, Kama, Krodha, Bhaya etc (Parapsychological factors), Abhishangaja Jvara (possession of evil spirits, infections etc), Mitya Ahara and Vihara (unwholesome diet and activities) followed by newly delivered women or during first appearance of breast milk. In the chapter of Ritucharya Adhyaya (chapter of seasonal regimens), Acharya Susrutha mentions about Rituvypat (seasonal disorders). In the Ayvapana Ritu (normal season), the Jala and Oushadi of a locality will be conducive with the health of the individual and will act as promoter of Prana, Ayu, Bala, Veerya and Ojas(longevity and health factors). But in the condition of Ritu Vyapat (seasonal complications) due to various Adharmas(MityaAhara- Vihara, Pranjaparada(volitional transgression)etc prevalent in the society during that time) where the seasonal influence affect the Jala (water sources) and Oushadi (vegetations) of the Desha (locality/land), it will lead to causation of various disease conditions such Vishama Jvara (irregular or intermittent fever). Sometimes even in proper seasons, due to the influence of various deeds such as Adharma (sinful activities/unnaturalness etc), the Desha (locality/land) will get affected by diseases such as Kasa, Shvasa, Jvara (various respiratory conditions, fever) etc\textsuperscript{8}. By the administration of decoctions (Kashaya Rasa Pradhana), the Malas (excreta including Dosas) becomes more stambitha (adhesive) and they do neither get separated from the channels of circulation nor undergo Paka
(metabolism). Thus they move to the sideward path leading to the manifestation of Vishama Jvara\(^9\) (irregular or intermittent fever)

Apart from this, Acharya Susrutha has explained specific aetiologies attributable to Vishama Jvara (irregular or intermittent fever). Acharya Sushruta has explained the two possibilities, one is Svabhavaja Hetu (internal factors) and another one is Agantuja Hetu (external factors). In Svabhavaja the residue of the Dosha vitiated, after treatment of different diseases are liable to produce the fever. Emaciated persons, one who is recently relieved from disease immediately indulging in unsuitable dietetics and life style etc, even the mildly vitiated Doshas, gain strength from Dooshya (Dhatu, Mala, Ka-la) and manifest Vishama Jvara, (irregular or intermittent fever) The Agantuja Hetu (external factors) mentioned by Sushruta is due to extrinsic factors or Bhootabhisanga (microbial infections). The vitiation of the Doshas in the body occurs due to various aetiologies and Sushruta identifies various factors, denoting Samanya Jvara Nidana (general aetiological factors) as factors responsible for the development of Jvara in body\(^{10}\).

As Charaka identifies the Vishama Jvara to be always Tridoshaja, the Sannipatika Jvara Nidana (caused by Tridosha involvement) mentioned in literatures also need to be reviewed in this context. Irregularities in diet pattern, fasting, changes in food habit without following dietetic regimen, seasonal influences, Inhalation of substances which yields unpleasant smell, intake of poisonous water and poisonous substances and habitation near mountains, Improper Panchakarma therapies, Improper adaptation of Ahara-Viharadi (diet and activities) after Shodana (eliminatory therapy) of the body, abnormal labour and intake of unwholesome regimen after delivery and simultaneous aggravation of two Doshas or three Doshas leads to manifestation of either Dvandaja or Sannipatika jvara respectively\(^{11}\).

Various authors have identified different aetiologies for Jvara and Vishama Jvara in particular.

All these Nidanas (aetiological factors) can be categorised into

**Table No: 1**

<table>
<thead>
<tr>
<th>Ahara</th>
<th>Vihara</th>
<th>Agantuja</th>
<th>Manasika</th>
<th>Anya</th>
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<tr>
<td>Ajeernaja</td>
<td>Ahitakara Vihara</td>
<td>Bhootaabhishanga</td>
<td>Shokaja</td>
<td>Rogotha</td>
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<td>Payasakshiradhi</td>
<td>Divaswapana</td>
<td>Nakshatrapeedajanya</td>
<td>Mans-Jvara</td>
<td>Prapakatha</td>
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<td>Apakwa dadhi</td>
<td>Maithuna after panchakarma</td>
<td>Abhicharaja</td>
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<td>Gramyaanupa</td>
<td>Sheetopachara after panchakarma</td>
<td>Abhishapaja</td>
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<td>Mamsa</td>
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<td>Virudha Ahara</td>
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<td>Abhigathaja</td>
<td>Apaprasoothi Janya</td>
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<td>Adhyasana</td>
<td>Vishaja, oushadipush-paganda</td>
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<td>Soothika jvara</td>
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All the varieties of Vishama Jvara (irregular/ intermittent fever) manifest due to the vitiation of all the three Doshas. However the predominant Doshas act as a causative factor. Occurrence of Jvara at a particular time depends on strength or weakness of seasons, day and night, Dosha and Manas; it is also due to past deeds. In a person suffering due to Ashubha karma (Mitya Ahara – Viharadi, Pranjaparada etc) even though Devadadi Grahas (due to God, evil spirits etc) and other Agantuja factors (external factors) may causes different diseases, such causes need not necessarily be the root cause of the disease. Inference is that these diseases are caused because of the Ashubha Karmas that make the body susceptible to disease.

Sadharana and Asadharana Nidana of Vishama Jvara: In the chapter of Janapadodhwamsa (epidemics), Charaka identifies vyadhi to be caused by two causes, Asadharana and Sadharana Hetus. Asadharana Hetus (uncommon factors) are Pratipurusha Niyata (dependent on individuals) and depend upon the Vatadi Dosha vitiation taking place due to various Mitya Ahara and Viharas. The identified Nidanas mentioned in literatures mostly focus upon these Asadharana Hetus. While Sadharana Hetus (common factors) affect every individual irrespective of the Prakriti (body constitutions) and other factors determining the presence and absence of disease in an individual. These are the Vayu (air), Desha (land), Jala (water), and Kala (season/time) influencing the Janapadha (community) leading to Janapadodhwamsa (epidemic). The severity of these diseases will be such that the affected area is vast with intense outcome.

In the Samanya Jvara Nidana (general aetiological factors of fever) told by Sushruta as well as in the Sannipatika Jvara Nidana (etiological factors for fever due to vitiation of Tridosha) told by Charaka, there are references about the influence of factors other than the Asadharana Hetus (uncommon) in causing Jvara (fever). The relevance of Hetu like Ritu Vyapat (climatic changes) comes in this context. The Ritu Vyapat mentioned in the Samanya Nidana of Jvara as well as Sannipatika Jvara Nidana highlight the identification of Sadharana Hetus in causing Vishama Jvara and its connection with Janapadodhwamsa (epidemic diseases). After the vitiation of the Jala (water), Desha (land) and kala (season) these Janapadodhwamsa Vyadhif (epidemic diseases) may lead to the onset of Vishama Jvara (irregular or intermittent fever).

Agantuja Nidana: The word Agantuja means external. Fever caused by external factors is called Agantuja Jvara. In Agantu fever, the fever appears first and Vata, Pitta and kapha Doshas increase later. In other fevers, the Doshas increase first and fever appears later. Sushruta states Agantuja as Anubhanda factor for all Vishama Jvara (irregular or intermittent fever).

In fever caused by Abhisanga (fever by evil spirits, microbes etc) there will be predominance of Vata and...
Pitta Dosha. The person may display both emotional and physical features, such as anxiety, laughing, crying and rigors. The practical entry of causative agents may invade physically and exercise an impact mentally. Abhishangaja type of jvara (fever by evil spirits, microbes etc) as elaborated by Susruta has a very critical role to play in regards to malarial fever. The causative organism identified in western text book of medicine, ie plasmodium strain may be critically appreciated to be the same organism which Sushruta envisioned to be responsible for the Agantuja (external) cause of Vishama Jvara. (Irregular or intermittent fever)

Krimi: Krimi (parasites/ microorganism) mentioned in various ayurvedic literatures also deserves attention at this context. Various Acharyas have mentioned Krimi under different categories. Among them, Bahya and Abhyantara classification as well as the 4 types based on the Nidana of Krimi (aetiological factors for microbial infestation) are important. The Samanya Lakshana (general features) of all Krimi include Jvara, Vivarnata, Shoola, Bhrama, Bhaktadvesha, Atisara, Chardi and Shvasa16 (fever, discoloration, pain, giddiness, diarrhoea, vomiting, respirotort disorders etc) because the Upatistana(origin) of Raktaja Krimi is Raktavahi Dhamani and Sira. By this we can infer that the krimi relating to malarial infection may be a Raktaja Krimi. The Adrushhta (invisible/micro) nature of Raktaja Krimi as well as the micro- nature of the plasmodium strain suggests that they belong to the Raktaja Krimi (blood born parasites)category. Acharyas have mentioned different types of Raktaja Krimi(blood born parasites). Raktaja krimi(blood born parasites) can also manifest Raktaja Vyadhi (disorders related to involvement of blood) out of which PleehaVridhi (splenomegaly) and YakrutVridhi (hepatomegaly) are among the presentations of malarial fever. Phlodhara (splenomegaly) presents with Mrdu Jvara(mild fever) among its features, may well be malaria with same scenario in stages of vishamajvara (irregular or intermittent fever) where Rakta Dhatu is one among the Dhatu involved. Owing to the description of Vishama Jvara(irregular or intermittent fever)by Sushruta in particular, it can be inferred that both Agantuja and Nija factors(external and internal factors) contribute to the onset of Vishama Jvara(irregular or intermittent fever). Sushruta highlights the role of Bhootabhisanga (microbes) in VishamaJvara (irregular or intermittent fever). Charaka however states that AgantuJvara(fever due to external factors) are first unstinted but later get mixed up with symptoms of Nija Jvara(fever due to internal factors). Agantu Jvara (fever due to external factors) has their own independent etiological factors and therapeutics. Vishama Jvara(irregular or intermittent fever) will always be associated with Tridosha involvement( involvement of three Doshas).

Classification of Nidana: Sannikrishta Hetu (Precipitating cause)
Mild aggravation of the Doshas by incompatible dietetics and behaviour produce Vishama Jvara after invading anyone of the Dhatus. When the Doshas which manifest Vishama Jvara decreases, the Jvara becomes mild and lurks in the Rasadi dhatus leading to emaciation, discoloration, lassitude etc.

Viprakrishta Hetu (causes of a longer duration): Payasakshiradi, Apakvadadi, Ajirna, Adhyashana, Gramyaamupa-mamsa, Virudhaahar (Mitya ahara’s), Vyayama, Divaswapna, Kashaya Sevena, etc.( factors such as diet which are non-conducive to the body, excessive ex-
exercise, day sleeping, decoctions which are astringent in taste etc). These types don’t produce a disease immediately but their cumulative or delayed effects produce diseases after a certain period.

Vyabhichari Hetu (feeble causes): Etiological factors, Dosha and Dooshya are the factors which determine the way a disease may or may not develop in an individual. If equilibrium state of Nidana, Dosha and Dooshya are disturbed or when they don’t support each other or when they are weak due to temporal factors, as a result disease may not manifest or there is delay in manifestation or manifested disease is mild or symptomatology of the disease are not properly expressed. When these three are favourable moderately or strongly with each other than result may be opposite. Ie, manifested disease will be simple, immediately manifested or all the symptomatology of the disease might be expressed completely.

Pradhanya Hetu (fulminating or strong hetu): Bhootabhisanga, Devata- Grahaprakopa etc(microbes, curse by God, evil spirits etc)

DISCUSSIONS

Among the various Jvara Nidana(aetiological factors of fever), Samanya Jvara Nidana( general aetiology as mentioned in Sushruta samhita) Samnipatika Jvara Nidana (aetiological factors as mentioned in Charaka Samhita), Vishama Jvara Nidana were taken into consideration for the same. The various Nidanas (aetiological factors) mentioned in the literature were then categorized into 5 groups. Aharaja, Viharaja, Manasika, Agantuja and Anya Nidanans (factors depending on diet, routine activities, mental, external and other factors)

Among the Aharaja (dietary) factors, all patients had history of consuming Mitya Ahara (improper diet). The diet of a person must depend upon the Prakriti(nature of food article), karanan(processing method), Samoyoga(combinations making food wholesome or unwholesome), Rashi (quantity of food), Desha (habitat), Kala ( depending upon the state of individual as well as season), UpayogaSamsthana (rules governing intake of food) and Upayokta (individual wholesomeness). When practiced against the Ashtavidha Ahara VidhiVisheshan Ayathana (factors determining utility of food article), these act as aetiological factors for the genesis of Vishama Jvara (irregular or intermittent fever). Among the Agantuja Nidana (external factors), it was identified that all the patients of Vishama Jvara(irregular or intermittent fever) were affected by Bhootabhishanga (plasmodium species in case of malaria). All the other Agantuja factors were identified to be absent in the patients with Vishama Jvara (irregular or intermittent fever). Various other Viharaja Nidanans (routine activities), Manasika Nidanans (mental factors), and Anya Nidanans (other aetiological factors) considered in the study also show that certain societal and climatic changes play a major role in the onset of Vishama Jvara (irregular or intermittent fever). The relevance of kala (season) in this aspect has to be taken into serious consideration.

From the data obtained from the observational study, it can be inferred that apart from Bhootabhishanga(microbes/plasmodium species in case of Malarial fever) which is the Agantuja(external) cause for VishamaJvara(irregular/ intermittent fever),many other factors such as Aharaja (dietary), Viharaja (routine activities), Manasika (mental factors) and Anya Nidanast(other aetiological factors) may precipitate the onset of Vishama Jvara(irregular or intermittent fever).
CONCLUSION

By considering all the above data obtained by the critical analysis of Vishama Jvara Nidana (aetiological factors of fever of irregular pattern) from various ayurvedic text books, it can be concluded that in the formation of Vishama Jvara (irregular or intermittent fever) both Nidana (internal) and Agantuja (external) factors play a major role. From the Sushruta Samhita we can identify that in a Krishna person (who is debilitated either due to emaciation due to a physiological reason or due to a disease), or a person in the Jvara Mukta Avasta (after relief from fever) on consuming Mitya – Ahara Viharadi (improper food and regimen), the already mildly aggravated Doshas vitiate further, gets excited by Vata and produces different types of Vishama Jvara (irregular or intermittent fever) depending upon the sites of kapha in successive order. These Jvara will be characterised by its ‘Arambha (onset), Kriya (course) and Kala (time of attack) of Jvara which is Vishama (irregular). Sushruta has identified Bhutadi (external factors such as microbes) as the Parahetu (main cause) for Vishama Jvara (irregular or intermittent fever). Hence we can identify that Vishama Jvara is as a disease caused by multifactorial causes.

Western literatures identifies female Anopheles mosquito as the vector for transmitting the malaria parasite belonging to the Plasmodium species. More than a century after this ground breaking discovery, we are still not in a position to completely control the outbreaks of malarial fever from our society. Unlike malarial fever, different aetiologies are explained in the context of Vishama Jvara (irregular or intermittent fever) which are considered as a diseases in parallel to malarial fever. The current lifestyle especially the dietetics may have an invariable role in the manifestation of diseases. The Mitya-Ahara (qualitative deprivation of food), may also increase the probability of the patient to a wide set of disease including Vishama Jvara (irregular or intermittent fever). Different Manasika Hetus (causes for mental disorders) indicate that probably due to the mental stress accompanied by physical exhaustion as well as the lack of hygiene people become susceptible to Vishama Jvara (irregular or intermittent fever). Ritu Vyapat (seasonal disorders) as well as different other Vyadhii (diseases) which decrease the Vyadhikshamatva (immunity) of patient make the patient suffer from Vishama Jvara (irregular or intermittent fever). The influence of Jana-padhodwamsa (factors for epidemic diseases) in this regard has to be considered with serious attention. The Dushti of Desha, Jala, Kala and Vayu (vitiation of land, water, season and air) play a major role in the genesis of Vishama Jvara (irregular or intermittent fever).

At this juncture, it wouldn’t be wrong to say that the Adharma (sinful actions) prevalent in the society, be it at the individual level or at the societal level, can be held accountable for all the vyadhi especially Vishama Jvara/malarial fever. Though some of the Nidanas (aetiological factors) mentioned in texts were not seen in the patients taken in the observational study, it would be immature to consider them as irrelevant in the onset of Vishama Jvara (irregular or intermittent fever). Further study with larger population and wider geographic area is required to reach into more conclusive evidences in the aspect of Nidanas (aetiological factors) acting as risk factors in the onset of Vishama Jvara/Malarial fever.

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