

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

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ABSTRACT

There are two different types of causes for the *Vishama Jvara*(irregular or intermittent fever), *Agantuja* (External factors) and *Svabhavaja Hetu*(internal factors). Apart from these various *Jvara Nidana*(etiology of fever) such as *Samanya Jvara Nidana* (general aetiology of fever) as told in Sushruta Samhita and *Sannipatika Jvara Nidana*(aetiology of fever caused by *Tridosha*) as told by Charaka Samhita also play a role in onset of *Vishama Jvara*(irregular or intermittent fever). The present study is divided into two parts; conceptual study and observational study. The severity of the malarial infection depends upon the duration and type of Plasmodium strain. Malarial fever may be considered as one of the fever mentioned within the spectrum of *Vishama Jvara*.(Irregular or intermittent fever) The Dosha vitiation occurring in the patient due to the *Mityahara – Viharadi* (unwholesome diet and activities) may be considered as the *Samavayi Hetu* (intimate cause) for *Vishama Jvara* (irregular/ intermittent fever), *Dosha –Doosha Samurchana* (interaction of Dosha and Doosya) will be the *Asamavayi Hetu* (non-intimate cause) and *Krimi* or *Bhootabhishanga*(microbes) may be considered as the *Nimitha Hetu* (instrumental cause) for *Vishama Jvara* (irregular or intermittent fever).

Keywords: Malarial Fever, *Vishama Jvara*, Nidana, risk factors

INTRODUCTION

Acharya Charaka introduces *Jvara*(fever) as a disease entity causing *Deha-Indriya-Manas-Santapa*(increased temperature of body, impairment of sensory functions and mind) and as *Sarvarogaagraja*¹ (supreme of all diseases). The *Prabhava*(characteristic features)of *Jvara*(fever) has been stated as *Santapa*(elevated body temperature), *Aruchi* (loss of appetite), *Thrisna*(excessive thirst), *Angamarda* (bodyache), *Hridayatha* (precordial discomfort), *Janmadonidana*²(present during birth and death). *Vishama Jvara* (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)⁴, the impairment of *Dhatu*(tissue elements of the body)as mentioned by Charaka Samhita⁵ or the *Agantuja Nidana*(external factors) by Sushruta Samhita⁶are 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*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 toolsetc), 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* (im-

proper 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 *Avyapana 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*(*Mitya Ahara- Vihara*, *Pranjarpara*(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) etc⁸. 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, Kala*) and manifest *Vishama Jvara*.(irregular or intermittent fever) The *Agantuja Hetu* (external factors) mentioned by Sushruta is due to extrinsic factors or *Bhootabhishanga*(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 fac-

tors responsible for the development of *Jvara* in body¹⁰.

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 dietic 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* respectively¹¹.

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

<i>Ahara</i>	<i>Vihara</i>	<i>Agantuja</i>	<i>Manasika</i>	<i>Anya</i>
<i>Ajeernaja</i>	<i>Ahitakara Vihara</i>	<i>Bhootaabhishanga</i>	<i>Shokaja</i>	<i>Rogotha</i>
<i>Payasakshiradhi</i>	<i>Divaswapana</i>	<i>Nakshatrapeedajanya</i>	<i>Manas-Jvara</i>	<i>Prapakatha</i>
<i>Apakwa dadhi</i>	<i>Maithuna after panchakarma</i>	<i>Abhicharaja</i>		<i>Kshayaja</i>
<i>Gramyaanupa Mamsa</i>	<i>Sheetopachara after panchakarma</i>	<i>Abhishapaja</i>		<i>Rituviparyaya</i>
<i>Virudha Ahara</i>		<i>Abhigathaja</i>		<i>Apaprasoothi Janya</i>
<i>Adhyasana</i>		<i>Vishaja, oushadipushpaganda Janya</i>		<i>Soothika jvara</i>

Ahitakara Ahara				Stanyavarana-janya
Adhika jalapana				
Kashaya Atisevana				
Guru Asatmya Anna				

All the varieties of *VishamaJvara*(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 deeds¹². In a person suffering due to *Ashubha karma* (*Mitya Ahara – Viharadi, Pranjapara-da 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 disease¹³.

Sadharana and Asadharana Nidana of VishamaJvara: In the chapter of *Janapadhodhwamsa* (epidemics), Charaka identifies *vyadhi* to be caused by two causes, *Asadharana and Sadharana Hetus*¹⁴. *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 *Jana-*

padha (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 *Janapadhodhwamsa*(epidemic diseases). After the vitiation of the *Jala* (water), *Desha*(land) and *kala*(season) these *Janapadhodhwamsa Vyadhi*(epidemic diseases) may lead to the onset of *VishamaJvara*(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*¹⁵(irregular or intermittent fever).

In fever caused by *Abhishanga*(fever by evil spirits, microbes etc) there will be predominance of *Vata* and

Pitta Dosh. 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 Susrutha 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 *Shvasa*¹⁶ (fever, discoloration, pain, giddiness, diarrhoea, vomiting, respiratory disorders etc) because the *Utpatistana* (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 *Adrushta* (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 *Plee-*

haVridhi (splenomegaly) and *YakrutVridhi* (hepatomegaly) are among the presentations of malarial fever. *Plihodhara* (splenomegaly) presents with *Mridu 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 *Bhootabhishanga* (microbes) in *Vishama Jvara* (irregular or intermittent fever). Charaka however states that *Agantu Jvara* (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 *Dhatu*s. When the *Doshas* which manifest *Vishama Jvara* decreases, the *Jvara* becomes mild and lurks in the *Rasadi dhatu*s leading to emaciation, discoloration, lassitude etc.

Viprakishta Hetu (causes of a longer duration): *Payasakshiradi*, *Apakvadadhi*, *Ajirna*, *Adhyashana*, *Gramyaanupamamsa*, *Virudhaahar (Mitya ahara's)*,

Vyayama, *Divaswapna*, *Kashaya Sevena*, etc. (factors such as diet which are non-conducive to the body, excessive ex-

ercise, 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) ,*Sannipatika 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 5groups. *Aharaja*, *Viharaja*, *Manasika*, *Agantuja* and *Anyana Nidanas* (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 *Pra-kriti*(nature of food article), *karana*(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), *UpayogaSamstha* (rules governing intake of food) and *Upayokta* (individual wholesomeness). When practiced against the *Ashtavidha Ahara VidhiVisheshha 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 *Bhootabhisanga* (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 Nidanas* (routine activities), *Manasika Nidanas* (mental factors), and *Anyana Nidanas* (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 *Bhootabhisanga*(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 *Anyana Nidanas*(other aetiological factors) may precipitate the onset of *Vishama Jvara*(irregular or intermittent fever)¹⁷.

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 *Nija* (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 *Para hetu* (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 man-

ifestation 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 *Vyadhi* (diseases) which decrease the *Vyadhikshamatva* (immunity) of patient make the patient suffer from *Vishama Jvara* (irregular or intermittent fever). The influence of *Janapadhodwamsa* (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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Source of support: Nil
Conflict of interest: None Declared