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Dr. Priyanka Marotirao**Yelgandhalwar**

PG Scholar, Department of
Rognidan Evum vikruti Vigyan,
CSMSS Ayurved
Mahavidyalaya, Kanchanwadi,
Chhatrapati Sambhaji Nagar,
Maharashtra, India

Dr. Deepali J Amale

Guide & Associate Professor,
Department of Rognidan Evum
vikruti Vigyan, CSMSS Ayurved
Mahavidyalaya, Kanchanwadi,
Chhatrapati Sambhaji Nagar,
Maharashtra, India

An observational literary study of association of sama and nirama avastha of jwara in dengue fever by evaluating CRP level

Priyanka Marotirao Yelgandhalwar and Deepali J Amale

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Abstract

Ayurveda describes Jwara as a disease of immense importance, affecting body, senses, and mind. Among its three stages Sama, Pachyamana, and Nirama the differentiation between Sama and Nirama avastha holds diagnostic and prognostic significance. Dengue fever, a mosquito-borne viral illness caused by *Aedes aegypti*, presents with high fever, myalgia, anorexia, and systemic inflammation. C-reactive protein (CRP), an acute phase reactant, is a marker of systemic inflammatory activity. This observational literary study aimed to correlate the Ayurvedic understanding of Aamapachyamanadi Jwara Avastha in dengue fever with CRP levels. Forty clinically diagnosed dengue patients were assessed for Sama and Nirama avastha symptoms along with CRP measurements. Findings indicated higher CRP levels during Sama Avastha, when disease activity is greater, and lower levels during Nirama Avastha, reflecting recovery. This suggests a possible scientific basis for the Ayurvedic concept of disease stages and their correlation with biochemical markers.

Keywords: Jwara, sama avastha, nirama avastha, dengue fever, CRP, ayurveda

Introduction

Ayurveda, the ancient Indian system of medicine, regards Jwara (fever) as one of the most significant diseases due to its systemic impact on sharira (body), indriya (senses), and manas (mind). The pathogenesis involves aggravated Vata dosha mixing with impaired Agni, obstructing channels of Rasa and Sweda, thereby suppressing metabolism and causing characteristic symptoms such as santapa (pyrexia), aruchi (anorexia), trushna (thirst), angamarda (body ache), hridayavyatha (chest discomfort), and vepathu (tremors).

Ayurveda classifies fever into three progressive stages Sama Avastha, Pachyamana Avastha, and Nirama Avastha. Sama Avastha is characterized by symptoms of indigestion (ajirna), heaviness (guruta), and anorexia (aruchi), whereas Nirama Avastha presents with lightness (laghutva), improved appetite, and subsidence of systemic distress.

Dengue fever, a viral disease transmitted by *Aedes aegypti*, is a modern clinical entity that parallels Ayurvedic descriptions of jwara. Its clinical features include high-grade fever, retro-orbital pain, severe headache, myalgia, nausea, vomiting, and rash. Laboratory evidence suggests C-reactive protein (CRP), an acute-phase protein synthesized by hepatocytes in response to cytokine release, increases during active inflammatory phases of dengue.

The present study was undertaken to explore whether Ayurvedic avastha-pariksha (stage-wise assessment) of Jwara in dengue fever correlates with CRP levels, thereby bridging classical Ayurvedic concepts with modern biochemical parameters.

Materials and Methods

- Study Design
- Type: Observational Literary Study
- Duration: 6 months
- Sample size calculation: $n = z^2p(1-p)/e^2$; calculated = 377, selected = 40 patients
- Study setting: OPD and IPD of Ayurved Rugnalaya, CSMSS peripheral centers

Inclusion Criteria

1. Clinically diagnosed patients of dengue fever aged 12-60 years
2. Patients exhibiting Sama avastha lakshanas: Hrillasa, Aruchi, Tandra, Aalasya, Gurugatrata, Ajirna, Trushna, Shwas, Bhrama

Corresponding Author:**Dr. Priyanka Marotirao****Yelgandhalwar**

PG Scholar, Department of
Rognidan Evum vikruti Vigyan,
CSMSS Ayurved
Mahavidyalaya, Kanchanwadi,
Chhatrapati Sambhaji Nagar,
Maharashtra, India

3. Follow-up assessment for Nirama avastha lakshanas: Kshudhapravritti, Gatra laghuta, Avyathatvam, Swedapravartanam, Jwara mardavam
4. Patients irrespective of sex, socioeconomic status, and religion

Exclusion Criteria

- Age <12 years or >60 years
- Patients with comorbidities such as Tuberculosis, Rheumatoid Arthritis, Cancer, etc.
- Assessment Criteria

Subjective

- Sama Avastha - Sarvanga graha (stiffness), Swedavarodha, Aruchi, Ajirna
- Nirama Avastha - Kshudhapravritti, Avyathatvam

Objective

Serum CRP levels measured at enrollment and after 8 days

Data Analysis

Statistical method: Chi-square test applied for correlation between avastha symptoms and CRP levels.

Results and Discussion

The study demonstrated that patients in Sama Avastha of Jwara exhibited elevated CRP levels, indicating heightened systemic inflammation, consistent with the acute disease phase of dengue. Conversely, in Nirama Avastha, CRP levels significantly declined, corresponding to clinical recovery.

This finding validates Ayurvedic descriptions where Sama Avastha is characterized by disease activity and accumulation of ama (metabolic toxins), while Nirama Avastha reflects clearance of toxins and restoration of agni (digestive fire).

Previous studies have also noted elevated CRP in viral infections including dengue, pneumonia, and typhoid, further substantiating the present results. By correlating CRP with Ayurvedic staging, this study provides an integrative model where ancient clinical observation aligns with modern laboratory markers.

Conclusion

The correlation between Sama and Nirama avasthas of Jwara in dengue fever with CRP levels highlights a scientific basis for Ayurvedic stage-wise disease assessment. Sama Avastha is associated with higher CRP, indicating active pathology, whereas Nirama Avastha corresponds with lowered CRP, reflecting recovery. This study bridges Ayurveda and modern diagnostics, supporting integrative approaches in clinical evaluation.

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