EFFICACY OF COMBINED THERAPY OF CARICA PAPAYA AND KIWI FRUIT IN DENGUE FEVER: A SINGLE CASE STUDY

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ABSTRACT

The purpose of study is combined effect of Carica Papaya leaves extracts and Kiwi fruit for Dengue fever. Dengue is mosquito borne disease caused by Dengue virus. All the symptoms of disease are due to low platelets count that may become very low if not managed. The combined use of Kiwi fruit and Carica papaya helps in reducing platelet aggregation. Kiwi fruit due to its immune boost function increases white blood cells that is found to be decreased in dengue fever that is leukopenia. A single Case study was done, and it is concluded that combined therapy of Carica Papaya and Kiwi fruit exhibited marked therapeutic effect on febrile condition of Dengue along with other associated symptoms. Other than this the drugs also corrected Leukopenia as well as Thrombocytopenia within 5 days.

Keywords: Dengue, Combined therapy, Carica Papaya leaf extract, Kiwi fruit, Thrombocytopenia.

INTRODUCTION

Dengue is considered globally as the most concerning mosquito borne arboviral disease in terms of morbidity and mortality that places a significant socioeconomic and disease burden on many tropical and subtropical regions of the world. Till date, there is no specific treatment which is accepted for dengue fever in Modern Medicine. In Ayurveda, dengue fever can be correlated with Visham Jwara. Various formulations have been mentioned in Jwara Prakaran and also tried, scientifically validated and documented by modern researchers, showing evidence of efficacy. A case study of Dengue fever was done which was successfully managed with Ayurvedic medications. The patient showed marked improvement in symptomatology along with hematological profile. So, it was concluded that dengue fever can be managed without any side effect in Ayurveda.

Case Report:

A 36 years old female patient reported to Kayachikitsa OPD of Dhanvantari Hospital Ashta with the chief complaint of fever and generalized body aches. On enquiry she revealed that she was quite asymptomatic before 2 days then she develop severe headaches, giddiness, generalized weakness, sore throat, body aches, fainting. After 2 days she got fever which was of high grade (104 degree F) and was associated with chills and severe headaches. Other associated symptoms were generalized body aches and weakness. For which
she took medication from a local medical store but she get only temporarily relief. So, with this history she came to Hospital there was no relevant history of past illness. As she belongs to a labour class in slum area, her socioeconomic history revealed Poor ventilation and hygienic standards. According her personal history, appetite was very much reduced, generalized weakness is more. On examination she was febrile (101degree F) had pulse rate 94/min, regular with good volume and Blood pressure of 100/70 mm of hg.

On systemic examination there was mild abdominal tenderness and symptoms of dehydration. She was subjected to various routine lab investigations and diagnosed as case of Dengue fever (Positive NS1 antigen and Ig test) other blood investigation revealed leucopenia ( 2400 cells/cumm) and Thrombocytopenia (Platelet count 65000 cells//cumm).

Management: She was admitted in IPD of the same department and was put on Ayurvedic line of treatment along with light diet and plenty of fluid intake. Hemogram was advised to repeat every day. After 5days there was remarkable improvement in haematological profile of the patient which was also evident symptomatically without any complications.

Table 1: Line of treatment given to the patient

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Drug</th>
<th>Dose</th>
<th>How many times a Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kiwi Fruit (only Pulp)</td>
<td>1 fruit</td>
<td>Once a Day</td>
</tr>
<tr>
<td>2.</td>
<td>Earandakarkatipatra (Papaya Leaves)</td>
<td>30 ml</td>
<td>Two times a Day.</td>
</tr>
<tr>
<td>3.</td>
<td>Tribhuvankirtiras</td>
<td>250mg</td>
<td>Three times a Day</td>
</tr>
</tbody>
</table>

Table 2: Day wise symptoms with haematological profile of the patient

<table>
<thead>
<tr>
<th>Day</th>
<th>Symptoms</th>
<th>Total leucocyte count</th>
<th>Platelet count</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>Fever, headaches Generalized Body aches, Loss of Appetite</td>
<td>2400 cells/cumm</td>
<td>65000cells/cumm</td>
</tr>
<tr>
<td>2nd</td>
<td>Diminutions in intensity of fever along with Headaches, Rest of the symptoms remained same.</td>
<td>2900 cells/cumm</td>
<td>72000cells/cumm</td>
</tr>
<tr>
<td>3rd</td>
<td>Diminutions in intensity of fever along with Headaches, Rest of the symptoms remained same.</td>
<td>3600 cells/cumm</td>
<td>116000cells/cumm</td>
</tr>
<tr>
<td>4th</td>
<td>Marked reduction in frequency as Well as intensity of fever, No Headaches</td>
<td>5400cells/cumm</td>
<td>1,32,000cells/cumm</td>
</tr>
<tr>
<td>5th</td>
<td>Low grade fever (upto 99 degree F) with no headaches, body aches markedly improved, appetite improved.</td>
<td>7400cells/cumm</td>
<td>146,000cells//cumm</td>
</tr>
</tbody>
</table>

After 15 days patient get relief from all the symptoms there is only presence of generalized weakness. And laboratory investigations shows there is NS1 antigen test become negative and both leucocytes and platelet count is also normal.

Table 3: Assessment Criteria and Observation

<table>
<thead>
<tr>
<th>Grade</th>
<th>Fever grade</th>
<th>Head ache Grade</th>
<th>Body ache Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>High (102-104 degree F)</td>
<td>Severe requires medicine</td>
<td>Severe hamper routine work</td>
</tr>
<tr>
<td>3</td>
<td>Moderate (100-102 degree F)</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>2</td>
<td>Low (99-100 degree F)</td>
<td>Mild</td>
<td>Mild</td>
</tr>
<tr>
<td>1</td>
<td>Very low (up to 99 degree F)</td>
<td>Occasional</td>
<td>Occasional</td>
</tr>
<tr>
<td>0</td>
<td>No fever 0</td>
<td>No headache</td>
<td>No Body aches</td>
</tr>
</tbody>
</table>
Table 4: Haematological Profile

<table>
<thead>
<tr>
<th>Grade</th>
<th>TLC Grade</th>
<th>Platelet count Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>2500-3000 cells/cumm</td>
<td>Less than 50000 cells/cumm</td>
</tr>
<tr>
<td>3</td>
<td>3000-3500 cells/cumm</td>
<td>50000--65000 cells/cumm</td>
</tr>
<tr>
<td>2</td>
<td>3500-4000 cells/cumm</td>
<td>65000-80000 cells/cumm</td>
</tr>
<tr>
<td>1</td>
<td>4000—4500 cells/cumm</td>
<td>80000--95000cells/cumm</td>
</tr>
<tr>
<td>0</td>
<td>More than 5000 cells/cumm</td>
<td>More than 95000 cells/cumm</td>
</tr>
</tbody>
</table>

Table 5: Effect of Therapy (based on grading)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Characteristic</th>
<th>BT</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fever</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Headache</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>Bodyache</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>TLC</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>Platelet count</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

(BT- Before treatment, AT- After treatment)

Review of Dengue Fever:

Dengue is mosquito borne tropical disease

Haemorrhagic Fever

Progression of Thrombocytopenia

Development of increased permeability and plasma leakage

Both the drug working as plasma expanders and reduces platelet aggregation

No specific Antiviral drug for dengue

If treated with these combined therapy at NS1 Stage and proper fluid management No need to provide platelet transfusion.

These both drug in combination is more effective in NS1 Stage
**DISCUSSION**

Ayurveda refers Dengue Fever as a Dandak Jwara. As Dengue is manifest due to Bhoot abhishanga Nidan (viral infestation) as well as vishamarambha (Fever-sudden onset or onset after nonspecific symptoms), Visham kriya (fever with or without chills and rigrors and Visham kala (irregular duration or interval of fever, it can be correlated with Visham Jwara. In general principle of Ayurveda Nava jwara (Acute fever) can be managed by,

- **Langhana** (fasting or taking light diet) maintains metabolic fire.
- **Swedana** (sudation) it eliminates toxins or metabolic waste out of our body.
- **Kala** (time waiting/patience) helps in correcting metabolism.
- **Yavagu sevana** (eating gruel)-improves digestion.
- **Tikta Rasa Bheshajam** (use of herb bitter in taste)-Due to Deepana guna, Tikta rasa helps in ameliorating digestive fire.
- **Ama Pachana** (drugs which improves abnormal metabolism).

As Dengue fever is an acute febrile illness so can be treated on line of Nava jwara. Both the drugs Earandakarkati and Kiwi fruit due to their tikta ras increases digestive fire or Agni and thereby corrects Agnimandya and Saam dosha condition. Earandakarkati which is just opposite to Guru and Picchila guna of Ama (formed product due to abnormal digestion and metabolism) Both Laghu and Ruksha guna helps in alleviate symptoms of Ama dosha. Other than this Earandakarkati has pachana guna which clears Ama from Samdosha make all doshas in Niram state. Kiwi fruit is as Rasayan in Ayurveda to combat immuno-suppressive condition, because it is excellent source of Vitamin C source of potassium and Folic acid. *Trihuvankirti Rasa* which has been mentioned in Jwarg,chikitsa prakaran has Ushna virya so effectively used in Amaj condition of Jwara.

Papaya leaves are great for boosting your immune system. They contain the compound, acetogenin which plays an important role in creating white blood cells. *Kiwi’s* are great fruits for bolstering the immune system. They are rich in antioxidants and essential nutrients such as, vitamin C, vitamin E, and potassium. These nutrients all work together to increase your white blood cell count.

**CONCLUSION**

It can be concluded from the case that combined therapy of Carica Papaya and Kiwi fruit exhibited marked therapeutic effect on febrile condition of Dengue along with other associated symptoms. Other than this the drugs also corrected Leukopenia as well as Thrombocytopenia within 5 days. No side effects were seen during the admission But further study is needed to study the effect of above formulation in other febrile condition also and secondarily. The study should be done on more no. of patients and for a longer duration to remark other benefits.

**REFERENCES**

6. https://ayurwiki.org/Ayurwiki/Carica_papaya_-_Madhukarkati#External_Links

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