

Dengue: Papaya Leaf Is the Cure

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Abstract: This study was conducted to investigate the platelet increasing property of *Carica papaya* leaves juice (CPLJ) in patients with dengue fever (DF). Its working starts in between 40 and 48 hours after the dosage. It was concluded that *Carica papaya* leaves juice (CPLJ) does significantly increase the platelet count in patients with DF and DHF. Dengue fever caused by dengue viruses (dengue 1–4) having *Aedes aegypti* mosquito as their principal vector, causes symptoms such as sudden onset of fever, headache, abdominal pain and back pain along with vomiting tendencies due to which dengue fever is also known as “break-bone fever. dengue hemorrhagic fever (DHF) or dengue shock syndrome (DSS) may occur as a complication of dengue fever. A study showed that administration of papaya leaf juice was beneficial in dengue patients in elevating the total white cell counts and platelet counts. leukopenia is a decrease in the number of white blood cells (leukocytes) found in the blood, which places individuals at increased risk of infection., thrombocytopenia refer to a relative decrease of platelets and blood.

Keywords: Ayurveda, dengue fever, papaya leaf juice, platelet count, dengue hemorrhagic fever

I. INTRODUCTION

Carica papaya (C. papaya, family Caricaceae, papaya) is one of the most popular and economically important plants in the world as its fruit is a common delicacy. It is a soft wooded single-stemmed perennial tree, 2-10 m in height, with a crown of large palmate leaves emerging from the apex of the trunk. The soft, hollow, cylindrical trunk ranges from 30 cm in diameter at the base to about 5 cm in diameter at the crown. Different parts of the papaya plants including fruit, dried fruit, leaves, dried leaves, stems, seeds and roots have long been used as ingredients in alternative medicine. For instance, the seeds are used for expelling worms and roots and seeds are used as an abortifacient agent. The leaves (especially fallen ones) are used variously for the treatment of fevers, pyrexia, diabetes, gonorrhoea, syphilis, inflammation and as a dressing for septic wound. Dengue is an arthropod-borne viral disease carried by *Aedes aegypti* as the vector, caused by 4 possible viral serotypes, namely, serotype 1, 2, 3, and 4 of the Flaviviridae family. There is no specific antiviral drug available for the treatment of dengue infection. Each episode of infection is known to induce a life-long protective immunity to the homologous serotype but confers only partial and transient protection against subsequent infection by the other serotypes. Secondary infection is a major risk factor for DHF possibly due to antibody-dependent enhancement. A patient with dengue fever presents typically with fever, headache, and rash known as the dengue triad. There are many other nonspecific signs and symptoms associated with DF and patient can progress to DHF and typically manifests as abdominal pain, bleeding, and even circulatory collapse. The clinical course of dengue has an abrupt onset followed by three phases, namely, the febrile phase, the critical phase and the recovery phase. It is during the critical phase that thrombocytopaenia, characterized by a decrease in platelet count below 100 000 per mm³ from the baseline and haemoconcentration, characterized by an increase of haematocrit by 20% or more, is detectable before the subsidence of fever and the onset of shock. Safety studies based on OECD guidelines for acute, subacute, and chronic toxicity were conducted on C. papaya extract and showed that it was found to be safe for human consumption. The present study was conducted to determine and investigate the traditional claim that CPLJ increases the platelet count in patients with DF and DHF.

II. MATERIALS AND METHODS

Papaya leaves of the the sekaki variant were chosen for the study based on fingerprinting and safety analysis which also contained allowable limit of heavy metals and microbial content. Juice was prepared fresh from the leaves that were washed thoroughly with an organic vegetable cleaning agent and reverse osmosis water few times. Juice was extracted from 50 grams of fresh leaves using a juice extractor without any addition of water, under sterile conditions. The fresh juice was aliquoted at a volume of approximately 30 mLs in sterile glass vials and transported daily in an icebox and kept at a temperature of below 4°C.

III. TREATMENTS

Once a current dengue infection was confirmed, a thorough screening of the patient was conducted. Baseline investigations included full blood count, bleeding profile, renal as well as liver function test, and cardiac enzymes. Patients in the intervention group received fresh juice from 50 grams. Papaya leaves, once daily, 15 minutes after breakfast for 3 consecutive days while receiving the standard management as per the National Clinical Practice Guidelines for the Management of Dengue. The controls received the standard management.



[fig -1 : fresh and healthy leaf of papaya]



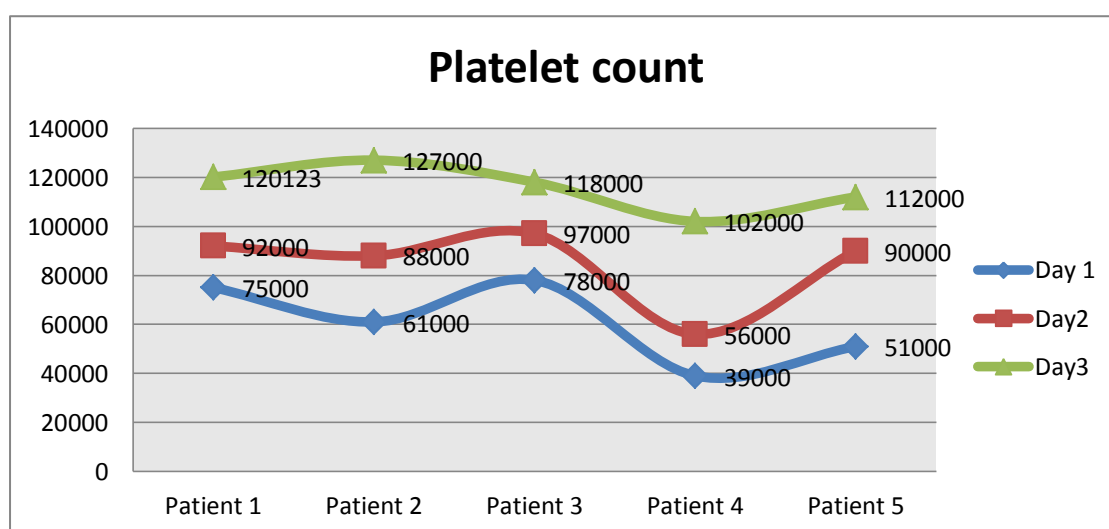
[fig – 2 : Extraction of papaya leaf juice]

IV. RESULTS

On treatment of five patients we found some changes in the count of platelets are as follows

[Table – 1: three days observation of patients provided papaya leaf extract as medication and their platelet count.]

	Day 1	Day2	Day3
Patient 1	75000	92000	120123
Patient 2	61000	88000	127000
Patient 3	78000	97000	118000
Patient 4	39000	56000	102000
Patient 5	51000	90000	112000



[Graph – 1: Comparision of platelet count of patients after administration of papaya leaf extract.]

V. CONCLUSIONS

Fresh *C. papaya* leaf extract significantly increased the platelet and RBC counts in the test group as compared to controls. Therefore, it is very important to identify those chemicals of *C. papaya* leaves as it can be recommended to be used as a medication to boost thrombopoiesis and erythropoiesis in humans and in animals in which these cell lineages have been compromised.

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