

## CASE REPORT

# Acupuncture and Papaya Leaf Powder (*Carica Papaya L*) to Treat Dysmenorrhea

Ario Imandiri<sup>1</sup>, Rohimatul Faizah<sup>1</sup>, Rakhmawati<sup>2</sup>

<sup>1</sup> Department of Health, Faculty of Vocational Studies, Universitas Airlangga, Jl. Dharmawangsa Dalam 28-30 Surabaya, 60286 Indonesia

<sup>2</sup> Department of Pharmacognosy and Phytochemistry, Faculty of Pharmacy, Universitas Airlangga, Jl. Dharmawangsa Dalam 28-30 Surabaya, 60286 Indonesia

### ABSTRACT

Dysmenorrhea is low abdomen pain which can be felt before, during and after menstruations. It is called Tong Jing in Traditional Chinese Medicine (TCM). Acupuncture and herbs therapies were used in dysmenorrhrea treatment. Acupuncture therapy at the Liangmen point (ST 21), Zhaohai point (KI 6), Xinjian point (LR 2), and Guanyuan point (CV 4) is arranged 12 times, 3 times a week The herbs therapy is papaya leaves powder (*Carica Papaya L.*) for 3 days during menstruation. The next menstrual period after therapy showed passable improvement, such as lowering level of stiffness and pain, both abdominal and waist, from 7 to 4 scale. Blood clot also disappeared on third to fourth day of menstrual period. Moreover, other grievances like dizziness, cold sweat, pale face, heavy chest, constipation, missing appetite, nausea and vomiting getting better. Acupuncture and herbs therapies can reduce menstrual pain.

**Keywords:** Dysmenorrhea, Acupuncture, Papaya leaf herbs

### Corresponding Author:

Ario Imandiri

Email: ario.imandiri@vokasi.unair.ac.id

Tel: +62 31-5033869

### INTRODUCTION

One of the disorders of menstruation is pain which is better known as menstrual pain or dysmenorrhoea. Menstrual pain can occur before, after, or during menstruation. It is felt in the lower abdominal area with pain that pierces or spreads depending on each individual. Menstrual pain results from a myometrial dysrhythmic contraction that displays one or more symptoms, ranging from mild to severe pain (1).

Acupuncture is done by sticking acupuncture needles into the body at certain locations on the surface of the skin to cure and prevent disease or disease symptoms (2). In addition to acupuncture, consuming papaya leaves can also reduce pain (3).

### CASE REPORT

Ms. M, a 21-year-old unmarried student complained of menstrual pain every month. She felt pain that causes her to be unable to move with dizziness and stiffness on the lower abdomen, feeling cold and having cold sweat, pale face, tight breasts, pain in the lower back and waist, pain in the leg, feel nausea, vomiting and even loss

appetite and drink (Table I). She got worse when she stressed. In addition, she also complained about hearing loss. Measurement of pain using a pain scale with values one to ten, indicated that equal to eight. It means a high value of pain. She felt menstrual pain since her first menstruation. Pain during this first period caused her to faint.

The expression on her face didn't look excited, yellowish; His lips and hair are dry. On the tongue examination, the tongue muscles seem pale red, there are tooth-marked

**Table I: Symptoms that accompany menstrual pain**

Complaint	Information
Blood clots on days 3-4	Complained
Stiff on the lower abdomen	Stiffness scale value: 7
Dizzy	Value of pain scale: 5
Feeling cold	Complained
Cold sweat	Complained
Pale face	Complained
The breasts feel tight or painful	Complained
Pain in the lower back	Value of pain scale: 7
Pain in the waist	Value of pain scale: 7
Pain in the leg	1-2 days before menstruation
Constipation	Complained
Appetite	Loss of appetite
Drinking	Loss of drinking
Nausea and vomiting	Complained

along the side of the tongue, a fissure in the middle of the tongue, papules, and a thin white membrane. Excess sign is obtained on Shu and Mu points examination in the stomach organ. A sign of deficiency is obtained at the examination of Shu and Mu points of the liver, kidneys, and heart. On the pulse examination, the stomach pulse feels strong, the heart pulse and the kidney pulse feel slow.

Numerical Rating Scale (NRC) can be used to measure pain scale quantitatively. Patients were asked to mention one number between zero until ten representing the degree of pain that they had experienced at that moment, the figure 0 represented painless while 10 meant severest pain (4).

In this case acupuncture therapy is using the point of Liangmen (ST 21), Zhaohai (KI 6), Xingjiang (LR 2) and Guanyuan (RN 4). It is done by three times a week, twelve times of therapy or for four weeks. Besides acupuncture therapy, is also combined with herbal therapy namely papaya leaves powder within the capsules. The dose of papaya leaves powder is one teaspoon or 4.5 grams per day, consumed during menstruation on the first, second and third days.

**DISCUSSIONS**

The severest menstruation pain is usually felt on the first day, and its pain causes patient can not do activities, while for the second and the third days, the pain has already diminished. Patients will show some signs such as cold sweat, pale, and feeling cold. There are other symptoms like feeling tight or pain in breast, lower back to waist and feet ache too. When the patient is stress, the pain will be worse. Its pain spread on lower hypocondrium. In addition, patient will strain hard to defecate. Furthermore lossing appetite and drink also sometimes feel nausea to vomiting. Acupuncture and papaya leaves (*Carica Papaya* L.) therapy were able to reduce patient’s pain and the intensity of the pain time as well (Table II). The reductions of pain were almost three points from eight to five based on the scale value of pain. The symptoms that follow during menstruation such as pain in the back and waist, nausea, vomiting, cold feeling and cold sweat, all significantly decreased and some recovered. Meanwhile, patient were still feeling pain in the waist and back when they consumed salty foods excessively that weaken kidney Qi and bones (2).

Menstrual pain is affected by Prostaglandin F2α (PGF2α). Symptoms that accompany menstrual pain like headache, nausea, vomiting, and back pain are caused by prostaglandins and prostaglandin metabolites enter the systemic circulation. Since menstrual pain occurs due to an increase in prostaglandin (PG) F2α which is cyclooxygenase (COX-2) that causes hypertonus and vasoconstriction in the myometrium resulting in decreasing blood flow and oxygen to the uterus which is

**Table II: Comparison of complaints before and after therapy**

Complaint	Before therapy	After therapy
Blood clots on days 3-4	Complained	Not complained
Stiff on the lower abdomen	Stiffness scale value: 7	Stiffness scale value: 4
Dizzy	Value of pain scale: 5	Value of pain scale: 3
Feeling cold	Complained	Not complained
Cold sweat	Complained	Not complained
Pale face	Complained	Not complained
The breasts feel tight	Complained	Little tight
Pain in the lower back	Value of pain scale: 7	Value of pain scale: 4
Pain in the waist	Value of pain scale: 7	Value of pain scale: 5
Pain in the leg	1-2 days before menstruation	During menstruation
Constipation	Complained	Not complained
Appetite	Loss of appetite	Increased appetite
Drinking	Loss of drinking	Increased drinking
Nausea and vomiting	Complained	Not complained

called ischemia. This dangerous stimulus causes reaction in the nociceptor which push the nerve transmission releases the substance that causes dysmenorrhea. In addition, there is PG E2α which also contributes to primary dysmenorrhea (1).

Stimulation of acupuncture activates A-δ nerve fibers and afferent C fibers in muscles. Needle stimulation of acupuncture points transmits signals to the spinal cord, and through the afferent pathway to the midbrain. The modulatory descending pain system is meant to change pain intensity. The mechanism of neurotransmitters release due to the stimulation of acupuncture needles can reduce symptoms of menstrual pain as well. As matter of fact, when excitatory signals from acupuncture reach the hypothalamus and pituitary, these stimuli trigger a neuroendocrine response, such as the follicular stimulating hormone, luteinizing hormone, estradiol and progesterone (2).

In Traditional Chinese Medicine, menstrual pain complained as a kidney and liver deficiency syndrome. The therapy is intended for kidney and liver tonification and reduction pain and symptoms. Based on Wu Xing, the cause of kidney and liver deficiency is due to stomach excess. So that the technique of sedation therapy in the stomach is needed (2).

The results of acupuncture treatment and herbal therapy showed that the patient’s pain reduced. Symptoms that follow during menstruation also decreased. Acupuncture points to reduce menstrual pain and the symptoms that follow are Liangmen point (ST 21) which functions to drain Qi Wei / stomach, reduce abdominal pain, nausea, vomiting, and loss appetite. Zhaohai Point (KI

6) is used to strengthen kidney organs and maintain Ren meridians. Xingjian point (LR 2) is focused to strengthen the liver, dizziness, stomach pain during menstruation. Guanyuan point (CV 4) serves to reduce abdominal pain during menstruation and can be used in all Xu / weak syndromes, especially lack of *Yang* and *Qi* (2).

Plant's part selection used to make traditional herbal medicines is based on a very high level of pharmacological compound's composition which is required from a part of the plant (5). Papaya fruit contains macro and micro minerals, namely Na, K, Ca, Mg, P, Fe, Cu, Zn, and Mn. A study showed that plant's leaves are the most useful part. Papaya leaves (*Carica Papaya* L.) contain alkaloids carpaine, pseudocarpaine and dehydrocarpaine I & II. Alkaloid carpaine found in papaya leaves functionally to increase appetite and to be deciduous menstruation. Papaya leaves also contain three extracts which have analgesic effects, namely n-hexane, ethyl acetate, and ethanol extracts (5). And the magnesium does too, since it has a direct effect on blood vessel pressure and regulates the entry of calcium into smooth muscle cells, so it affects contractility, tension and relaxation of smooth muscle of the uterus (3).

Patients indicated pain changing based on the given of herbs during menstrual period. Before having therapy, patients suffered longer pain on the first day of menstrual cycle, even could disturb activities and their sleeping time. Having given herbs therapy on the first day of menstrual flow, the pain decreased so the patient's activities and sleeping time undisturbed. Menstrual pain caused by the increase of prostaglandin (PG) F<sub>2α</sub> which is some *cyclooxygenase* (COX-2) that affected hypertonus and vasoconstriction on myometrium so that declining blood and oksigen circulation to uterus which resulted ischemia. This dangerous condition stimulate some respons from nociceptor then activate neural transmission by releasing some substances that produce dysmenorrhea (3).

Papaya leaves (*Carica Papaya* L.) contain vitamin E functioning to reduce menstrual pain through inhibition of prostaglandin biosynthesis. Vitamin E acts as suppresser to the enzyme activity of phospholipase-A and cyclooxygenase by inhibiting of cyclooxygenase

post-translational activation which reduce prostaglandin production. Vitamin E also increases the production of prostacyclin and PGE<sub>2</sub> which function as vasodilators that can relax the uterine smooth muscle. Calcium and vitamin C contained in papaya leaves can affect contractility and relax the uterine smooth muscle (1). Beside papaya leaves, other herbs that can be used to treat Dysmenorrhea are Tamarind (*Tamarindus indica*) and Red Ginger (*Zingiber Officinale Roscoe*).

## CONCLUSION

Acupuncture therapy at point Liangmen (ST 21), Zhaohai (KI 6), Xingjian (LR 2), and Guanyuan (CV 4) combined with papaya leaf herbs (*Carica Papaya* L.) not only can reduce menstrual pain but also menstrual symptoms classified kidney and liver deficiency syndrome.

## ACKNOWLEDGEMENT

The authors would like to thank the staffs of Pengobat Tradisional Study Program in Faculty of Vocational Studies of Universitas Airlangga who have involved in the clinical care of the patient.

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