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Research Article

VASCULARISATION OF ENDOMETRIUM IN PRIMARY DYSMENORRHEA WSR TO *KHA-VAIGUNYA*

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ABSTRACT

Painful menstruation can be correlated with *Udavartini Yonivyapad* in *Charaka Samhita* or *Udavarta Yonivyapad* in *Susruta Samhita*. Deregulation of endometrial blood flow has been associated with several menstrual disorders including primary dysmenorrhoea, menorrhagia, inter-menstrual bleeding and endometriosis. Doppler assessment of uterine artery is essential to reflect endometrial vascularisation. It is identified that pain in primary dysmenorrhea is caused by excessive endometrial prostaglandin production leading to abnormal uterine activity and consequent changes in blood flow within the uterus. *Kha vaigunya* is a process with a general cause for abnormalities in the *Srothas* (vasculature). It is a gradually progressing chronic phenomenon which may lead to an interruption in circulation of materials causing the physiological arrest of metabolism and the elimination of metabolic wastes. Therefore excessive production of the metabolic materials leads to excessive amounts of prostaglandin. The aim of this study was to explore the relationship between pain and uterine vascularity and the study suggests that primary dysmenorrheaic patients tend to have moderately positive correlation with pain intensity.

INTRODUCTION

Pain associated with menstruation is called dysmenorrhea. More than half of women who menstruate have some pain for 1 to 2 days each month. Usually, the pain is mild. But for some women, the pain is so severe that it keeps them away from doing their normal activities for several days a month. Decrease in working time for about one month a year is a socially and economically burden. Painful menstruation can be correlated with *Udavartini Yonivyapad* in Charaka Samhita or *Udavarta Yonivyapad* in Susruta Samhita. Deregulation of endometrial blood flow has been associated with several menstrual disorders including primary dysmenorrhoea, menorrhagia, inter-menstrual bleeding and endometriosis.[1] Doppler assessment of uterine artery is essential to reflect endometrial vascularisation. It is identified that pain in primary dysmenorrhea is caused by excessive endometrial prostaglandin production leading to abnormal uterine activity and consequent changes in blood flow within the uterus. The patients with severe dysmenorrhea are vulnerable to have higher uterine blood flow indices than healthy[2]. *Kha vaigunya* is a process with a general cause for abnormalities in the *Srothas* (vasculature). It is a gradually progressing chronic phenomenon which may lead to an interruption in circulation of materials causing the physiological arrest of metabolism and the elimination of metabolic wastes. According to Ayurveda philosophy, the increase in prostaglandins is an accumulation of wastes particles in the channels, which creates a link to further thinking. Therefore the objective of this study is to determine blood flow in endometrial vessels in patients with dysmenorrhea and find out the correlation between uterine vascularisation and primary dysmenorrhea.

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MATERIALS AND METHODS

24 patients diagnosed with dysmenorrhoea attending the O.P.D. of *Stree Roga* & *Prasuti Tantra*, IPGT & RA, were randomly selected for the study irrespective of caste, religion, financial status etc. A detailed history regarding dysmenorrhea, family history, obstetric history, menstrual history, past illness and clinical finding pertaining to *Dosha, Dushya, Dushti, Agni, Srotas* etc, were filled up in a specially

prepared proforma on Ayurveda guidelines. All the patients had undergone Doppler Ultrasound scan during their diagnostic check-up to assess PI and RI indices.

Vascularisation of the uterus was visualized with the colour Doppler technique and blood flow velocity wave forms were obtained by placing the Doppler sample volume over the coloured areas and activating the pulsed Doppler function. (Image-1)

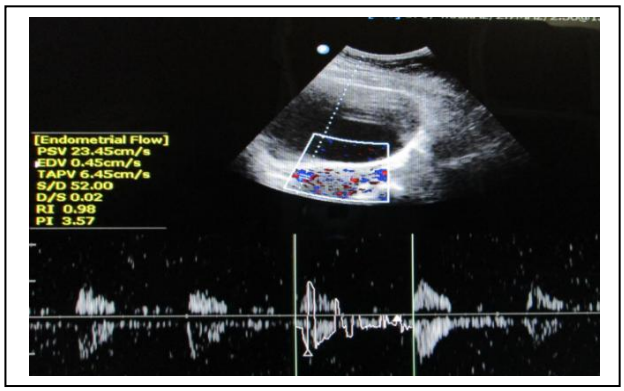
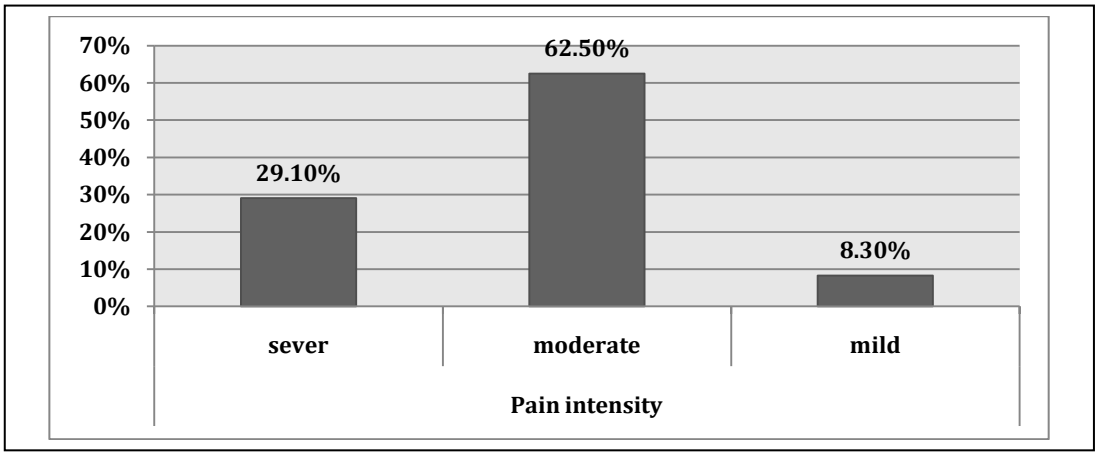


Image 1

Age group between 15-25 years patients were included for the study, with chief complains of painful menstruation at least three cycle and pain along with scanty or irregular menses. The patients who were having chronic illness, e.g. hypertension, diabetic mellitus, intrauterine contraceptive devices and any uterine pathology were excluded.

RESULTS

It was not possible to visualize all the vessels studied at every ultrasound session. Uterine and arcuate arteries were visualized and measurements were performed in all 24 patients. There were 29.1% patients with severe pain and 62.5% moderate pain. (Table 1)



In general observation 58.3% were vegetarians and there were considering amount of *Vega Dharana* (Table 2)

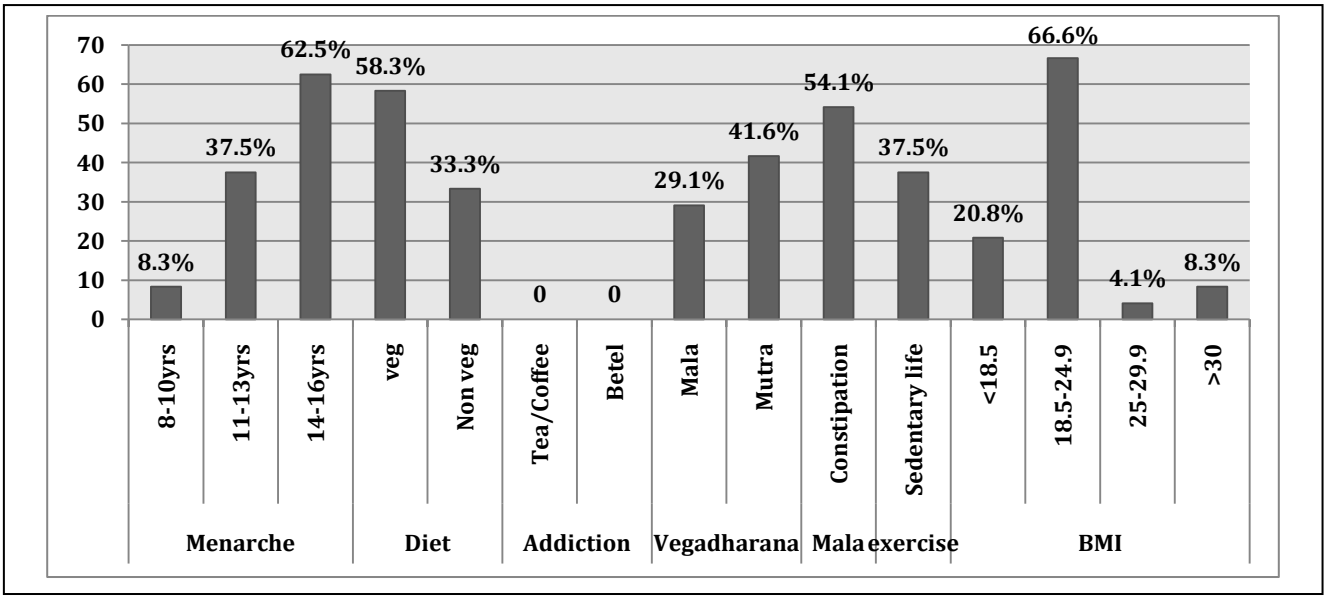


Table 2: General observation

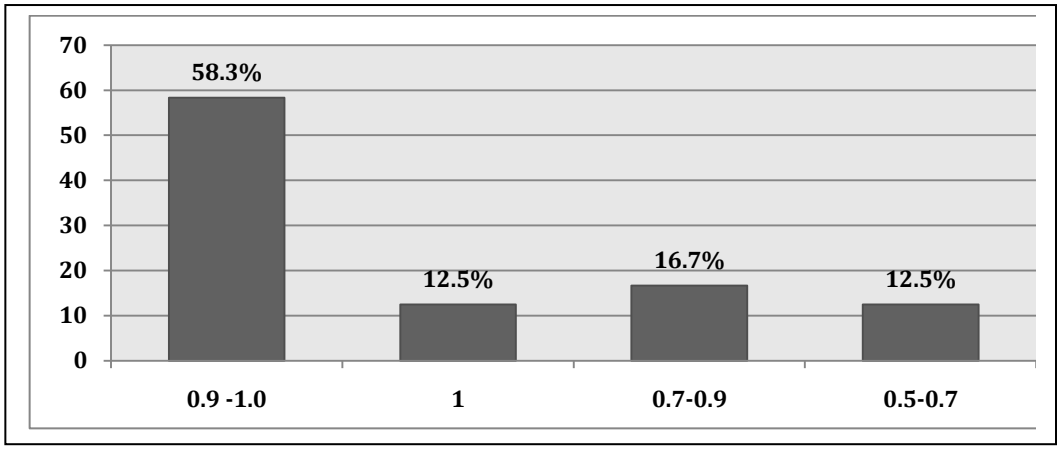


Table 3: RI Value %

All the patients were found with RI index value below 1 and 58.3% RI index value between 0.9 - 1 and 58.3% patients were identified having PI index value above 2 (Table- 3).

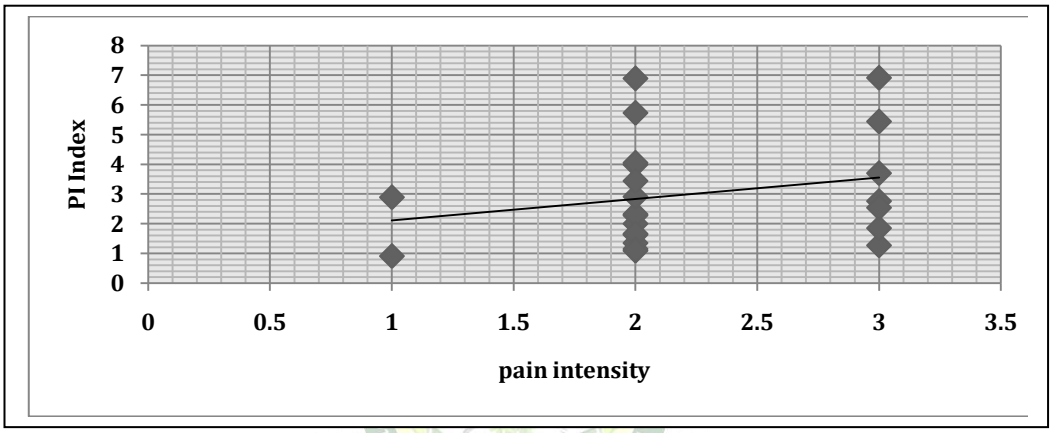
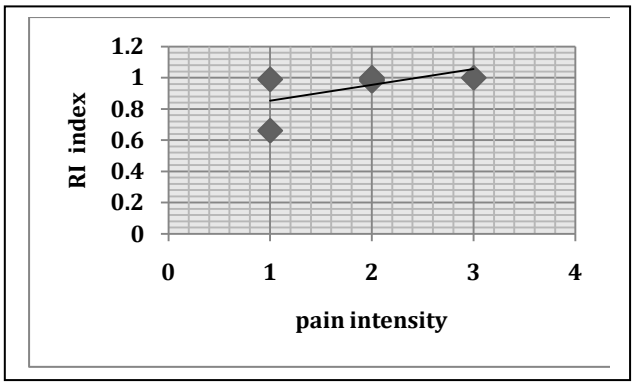


Table 4: Scattered chart of pain intensity and PI value- Correlation coefficient (r) 0.2414

During the study 25% patients were presented having scanty and 8.3% with excessive menses. Among 25% scanty menstruation, 83.3% of patients had higher PI values, which means the patients with readings of high PI are more vulnerable to face scanty menstruation. Elevation of pain was found to have an association with PI indexes which showed increase respectively.

In this study only patients with scanty menses were found to have higher PI values. RI indexes within normal range but increasing with pain. Therefore PI & RI indexes shows moderately positive correlation with pain (Table 5, 6)



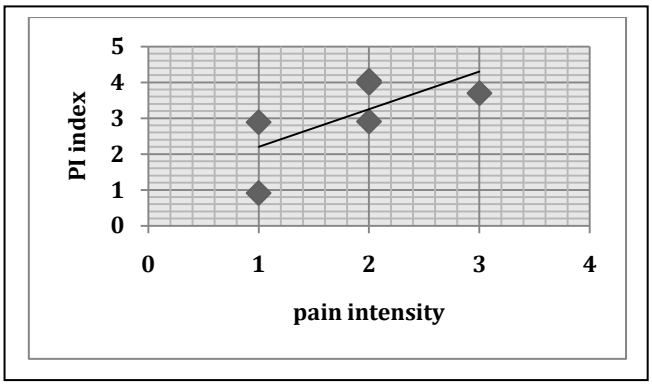


Table 5, 6: Scattered chart of pain intensity and RI & PI value among scanty menstruation patients- Correlation coefficient (r=0.67, r=0.56)

RI Index, This index, also known as *Pourcelot's ratio* (Pourcelot, 1974), examines the difference between the peak systolic and end diastolic velocity and is expressed by: RI = (S – D)/S Where S is the peak systolic velocity and D is the minimum or end diastolic velocity. The RI is suitable for low resistance vascular beds with continuous flow throughout diastole

Pulsatility Index (PI), This index, also known as the mean pulsatility index to distinguish it from the

peak to peak pulsatility index, is expressed by: PI = (S – D)/velocity $_{mean}$ Where S is the peak systolic velocity, D is the end diastolic velocity and velocity $_{mean}$ is the time averaged maximum velocity over the cardiac cycle[3].

DISCUSSION

In this study only patients with scanty menses were found to have higher PI & RI indexes and moderately positive correlation with pain (Table 5, 6), elevation of pain was found to have an association with PI & RI indexes which showed increase respectively. Remaining patients had only higher PI index and moderately positive correlation with pain.

Increased uterine baseline pressure and changes in uterine microcirculation are important factors in the pathophysiology of primary dysmenorrhea.[4] Since vaso-constriction and the ischemia of primary dysmenorrhea leads to poor uterine perfusion and high uterine resistance. This finding suggests that uterine circulation in women with primary dysmenorrhea is disturbed not only on the first day of the menstruation but throughout the whole cycle. This kind of blood flow pattern (high vascular resistance in all phases of the cycle) can be found in infertile women. [2]

According to Ayurveda prospective there may be a defect in *Sukshma* and *Sthula Srotas* specially *Mamsavaha Srotas* and *Raktavaha Srotas* in the reproductive system. *Acharya Sushruta* has mentioned; Disease originates at the site where due to abnormalities of channels "*Khavaigunya*" the aggravated *Dosha* while circulating in body stick in this place [5]

However, it is different from the vitiation of body channels (*Srotodushti*), which is an outcome of admixture of *Dosha* and *Dushya.* This process of vitiation takes place at the site where *Khavaigunya* already exists.

Therefore vitiated *Vata Dosha* is capable of increasing abnormalities in uterine vessels due to their "*Khavaigunya*" and creates deformities in *Sravana:* Permeation, infiltration of duly formed *Dhatus* or tissues *Ayana:* Transport of transforming nutrients (*Rasa*) - enforced by *Vyana Vata, Mokshana*: elimination of non-convertible by products of transformation called excreta – the *Mala* end up with resulting in creating *Ama*, reducing menstrual blood which is known as scanty menstruation and pain.

CONCLUSION

This study suggests that primary dysmenorrhic patients had a moderately positive correlation to pain intensity with elevated PI value of the uterine vasculature. The patients who had painful scanty menstruation showed both elevated PI & RI values throughout the cycle which showed a parallel increase with the pain. Further research should be carried out to identify profoundly these etiopathologies and to understand dominant pathology of uterine vascularisation.

REFERENCES

1. Jaffe R B, Importance of angiogenesis in reproductive physiology. Seminars in Perinatology Volume 24, Issue 1, February 2000, Pages 79-81
2. Romana Dmitrovic, Trans vaginal color Doppler study of uterine blood flow in primary dysmenorrhea, Acta Obstetricia et Gynecologica Scandinavica 2000; Volume 79, Issue12 December 2000 Pages 1112-1116
3. Richard P, Dickey, Doppler ultrasound investigation of uterine and ovarian blood flow in infertility and early pregnancy Human Reproduction update 1997 volume 3, No 5 Pages 467-503.
4. Chan WY, Dawood MY, Fuchs F. Prostaglandins in primary dysmenorrhea. Comparison of prophylactic and non-prophylactic treatment with ibuprofen and use of oral contraceptives. Am J Med 1981; Volume 70 (3): Pages 535–41
5. Singhal G D, Sushruta Samhita Volume 1 (Suthrasthan) Delhi, Chaukhambha Sanskrit Prathisthan 2007, Page 219

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