A Retrospective Case-Control Study on Influence of *Ahara* and *Vihara* on *Udavartini Yonivyapad* w.s.r. to Primary Dysmenorrhea

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ABSTRACT

Women play a multidimensional task in fulfilling various roles in life. Health of the women not affects herself, but also influences the society as she is considered to be the direct reproducer of future generation. Menstruation marks the beginning of physiologic maturity in girls and has a significant role in her journey throughout. Painful menstruation affects the quality of women's life to a great extent. Diet and lifestyle play a pivotal role in the causation of disease as well as treating the disease keeping in mind the present study was taken. **OBJECTIVES:** To identify the influence of food habits in *Udavartini yonivyapad* w.s.r to primary dysmenorrhea, to identify the influence of lifestyle in *Udavartini yonivyapad* w.s.r to primary dysmenorrhea, To study about *Udavartini yonivyapad* and Primary dysmenorrhea. **METHODOLOGY:** The study was retrospective case-control study. A questionnaire was framed based on the common food and lifestyle of people in and around Udupi district. These formulated questionnaires were given to subjects aged between 18-35 years and fulfilling the inclusion criteria through screening and were segregated into two groups of 90 each. The data was collected and analysed using IBM SPSS software version 20. **RESULTS:** After analysing statistically, out of 50 questions in the food habits domain 22 foods had significant value and 2 foods had highly significant value. Among 20 questions in the lifestyle domain, 11 questions showed significant result and 3 questions showed highly significant results. Food items like packet foods, chats and lifestyle factors like stress, irritation, and mood swings showed highly significant result in causing dysmenorrhea. Most of these were found to increase the *vata dosha* and also hormonal imbalance. Comparatively lifestyle factors had more effect on dysmenorrhea than that of food habits.

Key Words: *Ahara, Vihara, Udavartini, Primary dysmenorrhea*

INTRODUCTION

Women perpetuate the mankind by creating and nurturing children. One of the most important changes occurring among adolescent girls is the onset of menstruation. It heralds the onset of physiological maturity in girls and becomes the part and parcel of their lives until the menopause.

With the advent of new millennium, women's status is expected to reach new horizons both socially and physically. But some of the physiological things make her slow down the race. Many of them experience minor psychological and somatic changes for a few days preceding

menstruation and during those days. It becomes difficult for her, when she has painful menstruation.

Dysmenorrhea is one of the most common gynaecological complaints in young women who present to physicians with complaints of pain during menstruation that interferes with daily activities. [1] It is usually primary in the adolescents and teenagers, and is associated with normal menstrual cycles, with no pelvic pathology.[2]

The prevalence of dysmenorrhea estimate varies from 45%-95%.[3] In India, prevalence rate of primary dysmenorrhea was found to be 87.7% who suffer from varying degrees of discomfort.[4] The incidence of primary dysmenorrhea of sufficient magnitude with incapacitation is found to be 5-15%.[5] Among them 10% are incapacitated for 1-3 days each month.

Dysmenorrhea seems to be common reason for absenteeism from work and school as a result of pain and discomfort. It is estimated that 5%-14% are often absent owing to the severity of symptoms. Thus, Dysmenorrhea, in severe cases, is associated with a restriction of day-to-day activities and absence from school or work.[6]

Ayurveda has given utmost importance to women health and explained different gynecological disorders under the common heading of *Yonivyapad*. Symptoms like immediate relief of pain following discharge of menstrual blood,[7] spasmodic pain and fatigue in *Udavartini yonivyapad* are akin with features of 'Primary Dysmenorrhea'. Treatment for dysmenorrhea aims to relieve pain or symptoms either by

affecting the physiological mechanisms behind menstrual pain or by relieving symptoms, using analgesics and hormonal drugs, which will definitely have adverse effects on the body on long term use. Hence it is important to prevent the condition than to take such treatment which has got adverse effects.

The concept of lifestyles being the reason for the genesis of diseases is very old and well known ayurvedic concept. Ayurveda highlights *asatmendriya samyoga, prajnaparadha* and *parinama* as the cause for disease.[8] Over indulgence in eating junk foods, lack of proper exercise, sedentary occupations and indulgence in wrong kind of activities are the examples of these. This can be considered in a gist as *Mithyachara*, which comprises both *ahara* and *vihara*. The term *mithya* here refers to *anuchita* or improper.[9] "*Mithyachara*" is one of the *nidana* for *yonivyapad*[10]. This holds good even for *Udavartini yonivyapad*.

It is undeniable that a well-balanced diet goes hand in hand with a healthy lifestyle. Food choice makes a huge impact on how we feel today, tomorrow and what the future holds in terms of promoting and maintaining good health. The right diet and lifestyle help in fighting many conditions and illness.

Although there are plenty of explanations regarding *ahara* and *vihara* as the cause for disease, there are no much study done in this field, also there are limited studies done on the influence of faulty diet and lifestyle for the causation of primary dysmenorrhea. Hence the study has been

undertaken to evaluate the impact of diet and lifestyle on *Udavartini yonivyapad* w.s.r. to primary dysmenorrhea in young adults.

OBJECTIVES OF THE STUDY

- To identify the influence of food habits in *Udavartini yonivyapad* w.s.r to primary dysmenorrhea.

- To identify the influence of lifestyle in *Udavartini yonivyapad* w.s.r to primary dysmenorrhea.

- To study about *Udavartini yonivyapad* and primary dysmenorrhea

MATERIALS AND METHODS

SOURCE OF DATA:

Literary source:

For the present study the primary source of literature was collected from Ayurvedic text books, contemporary text books, various journals, previous studies conducted on similar subjects in different universities, and from the websites about the study.

Sample source:

Subjects fulfilling the inclusion criteria, visiting the OPD and IPD of SDM College of Ayurveda and Hospital, Udupi and subjects from different colleges in and around Udupi district.

STUDY DESIGN:

Retrospective case – control study was adopted to find the relation between diet, lifestyle and primary dysmenorrhea.

This study gives an insight of past events, as in diet and lifestyle and other risk factors in primary dysmenorrhea.

DURATION OF THE STUDY:

2 years.

METHOD OF COLLECTION OF DATA:

The study was done in two steps-

1.   Formulation of the questionnaire:

The questionnaire had two main domains, one for *ahara* (diet) and other for *vihara* (lifestyle). For the first one, a list of food preparations, food articles commonly consumed by folks in and around Udupi, and which were considered to be risk factors- were made into questionnaire in the form of YES or NO format and frequency format questions as in seven-point Likert scale. The latter domain had questions on various common lifestyles recorded in the same format as above. The initial set of questions was on the personal history, menstrual history (five-point Likert scale), and relieving factors, followed by questions about food habits and lifestyle. The measurement was based on nominal scale for initial personal history and ordinal scale for rest of the part. Questionnaire was prepared on the basis of commonly used food and lifestyle habits in this area, seeing the risk factors, and on the basis of some of the previous studies conducted.

2.   Observational study:

These formulated questionnaires were given to subjects fulfilling the inclusion and exclusion criteria through screening and the accepted subjects were segregated into two groups. Screening proforma was made based on the

menstrual history. It had questions on menstrual cycle, menstrual pain, effects on day- to- day activity, and about other gynaecological complaints and systemic illness in nominal and ordinal form.

If the subjects had regular menstrual cycle, experienced pain that affected their day to day activity, and aged between 18-35 years were included under case group.

If the subjects had regular cycle, with no pain, not affecting their day- to- day activities and aged between 18-35 years were included under control group.

And the subjects who did not have regular cycles, who had complaints of other gynaecological disease and other systemic illness were rejected for the study. Subjects included patients attending the IPD and OPD of SDMCAH Udupi, students of different classes of SDMCA Udupi and also students, teachers and doctors from different institutions of Udupi district

DIAGNOSTIC CRITERIA:

Diagnostic criteria for Primary dysmenorrhea – **ICD 10 (code N.94.4)**

• The pain begins a few hours before or just with the onset of menstruation.

• The severity of pain usually lasts for few hours, may extend to 24 hours but seldom persists beyond 48 hours.

• Pain is spasmodic and confined to lower abdomen; may radiate to the back and medial aspect of thighs.

• Systemic discomforts like nausea, vomiting, fatigue, diarrhoea, headache and tachycardia may be associated.

• May be accompanied by vasomotor changes causing pallor, cold sweats and occasional fainting. Rarely, syncope and collapse in severe cases may be associated

INCLUSION CRITERIA:

Study Group

• Individuals aged between 18-35 years.

• Individuals with symptoms of Primary/ spasmodic Dysmenorrhoea.

• Individuals with *lakshana* of *Udavartini yonivyapad*.

Control Group

• Healthy individuals between 18-35 years

• With regular menstrual cycles

• With no apparent menstrual problems

EXCLUSION CRITERIA:

Study Group

• Individuals having any other systemic illness

• Secondary dysmenorrhea

Control Group

• Known case of any gynaecological disease

• Any systemic illness

STATISTICAL ANALYSIS

The data was collected and analysed using IBM SPSS software version 20. **Odd's ratio** and exposure rate were calculated from the computed data to measure the strength of the association between risk factor and disease using the standard formula. The statistical tests applied were **Chi-Square Test** to see the significant difference

between the groups, **Cramer's V Coefficient** to see the strength of association.

SAMPLING AND SAMPLE SIZE

Purposive sampling method was adopted.

For the present study, 180 subjects were taken, and divided into two groups, 90 in each group respectively.

*CASE group***:** 90 subjects with diagnosed case of primary dysmenorrhea, who are exposed and not exposed to the risk factors.

CONTROL group: 90 Healthy individuals, who are exposed and not exposed to the risk factors.

RESULTS

Out of 50 questions in the food habits domain 22 foods had significant value and 2 foods had highly significant value. Among the predominant taste of the food **spicy** food and **sweet** showed significant value and showed low association, whereas **sour** and **salty** foods did not show any significant result but sour foods showed very low association and salty foods showed high association. **Maida** also did not show any significant value and had low association. It was seen that consumption of **dal** also did not show significant value and had very low association. Black-gram and its preparations like **idli** and **dosa** did not show significant result and had very low association, whereas **vada** had significant value and also low association. Consumption of **tuberous vegetables** like **potato**, **yam** etc showed significant value especially when taken in boiled form and had low association. When taken in roasted and fried form did show any significant value and also, had very low

association. **Leafy vegetables** when taken in any form (fried, roasted, raw, boiled) did not show any significance and had very low association. **Garlic** showed no significance and showed very low significance. It was seen that **onion** showed significant value but had low association statistically. **Spices** and **condiments** also showed no significance in the causation of disease and also showed very low association. It was the same in those who consume **sprouts** i.e., no significance, low association. Intake of **pickles** showed significant value but low association. **Milk** and milk products like **ghee** showed no significant value and very low association. **Coconut** intake in the food also did not show any significant value, and had very low association. Consumption of **curd** showed significant value in the causation of dysmenorrhea but the association was found to be very low. But the intake of curd rice did not show significant value and showed low association. Snacks like **packet chips, chats** showed highly significant value but low association and **packet noodles, puffs, samosa, bread** showed significant value with low association. Beverages like **tea, coffee, milkshakes, lassi** did not show any significance, while **aerated drinks** showed significant result. And in all the cases there was very low association. **Eggs** showed significant result when taken **raw** form with low association. When taken in boiled, half fry or omelette form did not show any significance. Among the non veg foods, **fish and other sea foods, chicken and mutton** there was no significant value and very low association. When considering the food

pattern, **skipping meals** especially breakfast and in those who **supress hunger** showed significant value with low association. **Paneer** and **mushrooms** showed significant result but with very low association. Restaurant foods like **Chinese noodles, biriyani, fried rice** showed no significant result but **Manchurians** and **pizza, burgers** had significant value. Desserts like **fruit salads, chocolates, pastries** showed no significant result. Consumption of **dry fruits** showed significant value with low association. **Radish** and **horse gram** did not show any significance in the present study.

Among 20 questions, 11 questions showed significant result and 3 questions showed highly significant result in the lifestyle domain. **Sleeping in the day time** showed significant result, in which sleeping for1 hour, more than 2 hours and sleeping for less than 1 hour all showed significant value and had low association. **Night sleep** did not show any significant value and also had very low association. Sitting uncomfortably or in **improper postures** showed significant value but with low association. **Travelling** did not show any significance and had low association. Suppression of urges like **suppression of flatus, stools, urine,** and **other natural urges** showed significant value with very low association. And **suppression of sneezing** showed significant result and low association whereas, **suppression of coughing** did not show any significance. **Forcefully passing stools** and showed significant value with low association. **Vomiting forcefully** did not show any significance. **Exercise** did not show did not

any significance and the association were very low. Mental factors like getting **irritated easily, stress, mood swings** showed highly significant value where stress showed medium association and other two showed low association.

DISCUSSION

PREDOMINANENT TASTE OF THE FOOD

It is a known fact the *katu rasa* increases the *vata dosha* and it was observed that the subjects in the case group were more exposed to spicy food. This may be one of the reasons to cause *Udavartini.*
Sweet foods were seen in higher exposure rate in cases when compared to controls. According to a study conducted, excessive intake of sugar increases the absorption of certain vitamins and minerals and lead to food instability. This creates menstrual spasm and pain. Also, certain nutrients directly influence the circulation status of sexual hormones and cause muscle spasm.[11]

Intake of *madhura rasa* pacifies *pitta* and *vata dosha* but increases *kapha*. It is seen that in the data collected, along with pain other associated symptoms like frothy menstrual blood and discharge of clots are also seen. Though the intake of *madhura* may pacify *vata* and reduce pain but at the same time, it may increase the chance of other associated symptoms due to interrelation of *kapha*.

VEGETABLES

Tuberous vegetables like potato, sweet potato, yam etc showed significant value (0.051) also, the exposure rate was higher among cases. Generally, potato increases *kapha, anila,* and causes

vishtambha, and also is *durjara* i.e., difficult to digest[12]. As a result, it causes bloating, flatulence etc, increasing pain and other symptoms.

Radish is said to balance *tridosha*, and even the *Mahamoolaka* when processed with oil becomes *tridoshahara*,[13] so probably this did not show any significant result though their exposure was more among cases.

Onions are the substance without which the food preparation or meal is incomplete in this area. Consumption of onion showed significant result (0.026). Although they are *snigdha, vatahara* may be due to its *teekshna, katu* quality[14] or due to combination with other food items it may result in dysmenorrhea.

Though the consumption of garlic was greater in cases, it did not show any significance as *Lashuna* is one of the best *vatashamaka* and *vedanahara*.[15]

Mushroom showed significant value (0.069) with high exposure in cases. They are rich sources of proteins, vitamin B complex and vitamin K. According to Ayurveda they are *guru, durjara* i.e., hard to digest and increases all three *doshas*.[16] May be that is the reason why subjects who consume mushrooms tend to get dysmenorrhea.

PICKLES

It is a known fact that pickles are extremely spicy in taste along with salted vegetables or sour fruits, which is nothing but *graamya ahara* as it includes - *amla, lavana, katu, kshara*. This increases all the *doshas* and further causes *dooshana* of *dhatus.* May be this is the reason for causing dysmenorrhea. And it was seen that in the present study exposure to pickles in cases were more than

in control and also case group showed more than two times (2.31) greater risk.

MILK AND MILK PRODUCTS

Milk and ghee did not show any significant result and the exposure was more in controls. This indicates that milk and ghee are conducive in dysmenorrhea. Even in the treatment of *Udavartini*, more importance of has been highlighted towards *ksheera* and *ghrita*. As both are *nitya sevaniya*[17] and the best *rasayana* [18] and a package of micro and macro nutrients, the consumption of these make the individual healthier.

Although *dadhi* is *vatahara*, it is also one among the *graamya ahara*[19], hence the regular consumption of this alters the quality of *dhathu* due to its *amla guna, amla paka*, making it *vidahi* and *abhishyandi* [20].

Paneer is another milk product which showed significant result. Paneer is a good source of protein and fat. In Ayurveda it is referred a *kilata,* which is *guru* and *vatahara* [21]. As it is *guru*, it becomes difficult for digestion, and it stays for longer duration in *amashaya*, that may produce *shuktapaka* and *vidahata* which influences over *vatadi dosha*, so that may be the reason to show pain and other symptoms of primary dysmenorrhea.

SNACKS

Processing makes a huge difference in the quality of food. The best example we got in the study was preparations of black gram like Idli, Dosa and Vada. Though the exposure for all these were higher in case group, only Vada showed

significant value (0.012). This may be due to fermentation and deep frying in oil.

Also, chats item showed highly significant value may be because of its extreme mixtures of taste and unhygienic way of preparations.

Puffs, samosa, bread was also showed significant value due to its *vidahi, guru guna* and increases *vata*. These foods have high glycaemic index, high caloric value and low nutritive value and also has effects on hormones as per several studies.

FAST FOODS

Manchurians, Chinese foods and pizza, burgers had significant value. The exposure rate was also higher in case group. This is because of addition of colouring agents, flavouring substances like sauces, ajinomoto and use of reheated oils etc.

It was also seen that exposure to packet foods and other packed items were also more and showed highly significant value in dysmenorrhea. This is again due to preservatives and additives added.

Preservatives, colouring substances, flavouring agents cause hampering of the hormones and has adverse effects on the all the systems of the body [22].

NON-VEG FOOD

It was seen that chicken, mutton, fish and other sea foods did not show any significant result, in fact the exposure was seen higher in the controls than in cases.

As per classics, use of *graamya, audaka, anupa mamsa* are conducive in *udavartini* [23] especially in the form of *mamsa rasa* probably due to their *tridoshahara* property.

Eggs showed significant result especially when taken in raw form. This is may be because raw egg proteins are not easily digestible and absorbable. These days artificial eggs and hormone injected eggs are in trend due to commercial purpose, so the consumption of this without any processing of it will lead to hamper the body hormone level and cause toxicity.

DRY FRUITS

Dry fruits are those which are devoid of water contents and are highly nutritious but if taken in excess it will cause several problems as they are high in sugar and calories. During processing, in order to have longer shelf life, certain preservatives like sulphites are added. These sulphites have the adverse effect of causing stomach cramps. May be due to these reasons there was significant result in causing dysmenorrhea.

FOOD PATTERN

When considering the food pattern, skipping meals especially breakfast and in those who supress hunger showed significant value with low association.

Skipping meals is one of the causes for aggravation of vata, as it is clearly mentioned in the literature that *langana*, *anashana* leads to *vata prakopa* [24]. Breakfast plays an important role by providing the body and brain with energy after overnight fasting. Skipping breakfast impairs the body's metabolism. This will also lead to *tridosha prokopa.*

It is clearly mentioned in Ayurveda that *kshudha vega dharana* causes *angabhanga-* nonspecific

body pain, *glani-* debility, *karshya-* emaciation, *shoola-* pain abdomen, *bhrama-* giddiness [25].

BEVERAGES

Beverages like tea- coffee, and though a kind of *viruddha-* milkshakes and lassi did not any significance, while aerated drinks showed significant result.

High amount of sugars, flavouring agents, alkaline additives, added with carbon dioxide, citric acid etc in the aerated drinks which are equivalent to pesticides, are associated with huge number of disorders.

SLEEP

After food, sleep is one of the three sub-pillars of health. Proper sleep bestows many benefits whereas improper sleep leads to several diseases. In the present study, sleeping in the day time, which is nothing but *diwaswapna* showed significant result. As *diwaswapna* increases *kapha dosha,* it makes the person inactive and impairing the body metabolism. This is also said to aggravate the *vata dosha.*[26] So the regular habit of *diwaswapna* may hamper the normalcy of *doshas* and *dhatus*.

POSTURE

Improper posture or sitting uncomfortably showed significant value in the present study. While explaining the cause for *yonivyapad,* Ashtanga Sangraha mentions *vishama anga shayana* as one of the reasons. Even in the *vataprakopaka nidana* it is mentioned that *dukkha shayyasana* lead to increase in *vata*, [27] this in turn may lead to pain. As it is postulated that the pain pathway in dysmenorrhea passes through T10 to S4 nerves,

may be any discomfort or pressure over these due to sitting or sleeping positions causes pain in dysmenorrhea.

NATURAL URGES

Vegas are natural detoxification process by which the body tries to protect itself. When they are held up forcibly, they cause serious damage to the body and mind due to accumulation of toxins on long term. It was seen that suppression of *vegas* like suppression of flatus, stools, urine and other natural urges showed significant value and suppression of sneezing showed highly significant result. As per literature, there is clear description that dharana of *vata, vit*, *mutra* and *kshavatu* causes *udavarta* [28]. This is because all these *dharana* of *vegas* causes *ruk, angabhanga, anaha, vibandha* etc [29] and specifically *urdhwa gamana* of *vayu,* which is the main reason for *Udavartini yonivyapad*. In general, dharana of any *vega* always produces *vata prakopa* [30]. Forcefully passing stools also showed significant value with low association. Though the exposure rate was more in case group for forceful vomiting, it did not show any significant result. But, forceful induction of vomiting may also cause upward movement of *vata* causing *Udavartini.*

MENTAL FACTORS

Mood swings are common during menstruation. From feeling irritated to getting angry they undergo various emotions. It is said that tension and anxiety lower the pain threshold. Due to dominance of oestrogen hormone they tend to get irritated and angry and due to dominance of progesterone they feel low, anxiety and sad [31].

In this study, mental factors like getting irritated easily (0.001), stress (0.000), mood swings (0.000) showed highly significant value where stress showed medium association and other two showed low association.

Several studies reveal that stress has direct impact on dysmenorrhea. Stress inhibits the release of FSH and LH, leading to impaired follicular development. As the progesterone is increased in the luteinised follicle during ovulation, stress induced impairment of follicular development alters the progesterone synthesis and release. This progesterone has effects on synthesis of PGF2α. Apart from progesterone, stress related hormones like adrenaline, cortisol also influence prostaglandin synthesis, which suggests that stress has both direct and indirect effect on dysmenorrhea [32].

CONCLUSION

As per the classics *Mithyachara*, which includes both *mithya ahara* and *mithya vihara* is one of the *nidana* for *yonivyapad*. This retrospective case-control study was carried out to see the influence of *ahara* and *vihara* in *Udavartini yonivyapad*. Pelvic pain and low back ache were the main symptom observed along with fatigue, nausea and irritability. These symptoms are akin with the features of *Udavartini yonivyapad.* The results showed mixed values i.e., significant and insignificant values. Food items like vada, tuberous vegetables, onion, pickles, curd, packet chips, chats, bread, raw egg, packet noodles, puffs, samosa, paneer, mushrooms, pizza, burger,

manchurians, dry fruits, aerated drinks showed significant value and in those who suppress hunger, skip meals, and consume excessive spicy and sweet food items also there was significant result. Also, consumption of excessive salty foods showed high association in causation of dysmenorrhea. Among the lifestyle factors day time sleep, sitting uncomfortably, suppressing flatus, stools, urine, sneeze, other natural urges, forceful defecation, stress, irritation, mood swings had statistically significant value. Comparatively lifestyle factors had more effect on dysmenorrhea than that of food habits. Therefore, it can be concluded that diet and lifestyle do have an influence on primary dysmenorrhea. Habits like eating balanced diet, not supressing urges, not stressing out are found to beneficial in preventing dysmenorrhea as per the data collected.

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