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A study on relation between *Pitta Pradhan Prakriti* females and ovulation with the help of basal body temperature method

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ABSTRACT

Prakriti indicates the predominance of natural *Doshas* which may interfere with the normal human physiology. The day of Ovulation may have some relation with *Prakriti* of females. In this competitive era females are facing many problems related to their menstruation such as painful menses, irregular menses, etc. in their adolescent age without any specific pathology in their reproductive system, which may cause problems related to infertility. Thus the present study enlightens the relation between *Pitta Pradhan Prakriti* females and Ovulation with the help of Basal Body Temperature method (BBT method). **Methodology:** To record the day of Ovulation in 30 *Pitta Pradhan Prakriti* females, basal body temperature method was selected. For confirmation, USG of ten females was done. **Applications of proposed thought:** In *Pitta Pradhan Prakriti* females by BBT method, we can observe that, whether the Ovulation is early or late as compared to normal 14th day of Ovulation and what are the effects of Pittadhikya on menstrual symptoms. Knowing the day of Ovulation will be helpful for identifying safe period and danger period. **Conclusion:** *Pitta Pradhan Prakriti* was found in 30 females. Vinishaya of *Prakriti* was done by percentage method and also by gradation method; grades were given on the basis of six *Gunas*. Day of Ovulation by B.B.T. method in *Pitta Pradhan* females was found to be the 14th and 15th day of menstrual cycle. Temperature rise on the day of Ovulation was found in the range 0.5°F - 0.7°F. By USG method, 90% results were matching related to day of Ovulation by BBT method.

Key words: *Prakriti, Ovulation, BBT method.*

INTRODUCTION

Prakriti is the basic fundamental of Ayurveda. It is the presentation or expression of oneself in terms of morphological, physiological and psychological aspect.

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The available texts of Ayurveda do not say much about the female *Prakriti*. Generally in women, appearance of first *Rajodarshan* i.e. menarche is considered as a milestone and motherhood is an up most goal of her life. Ovulation is the most important phase of menstrual cycle since it is the fertile phase of monthly cycle which is responsible for conception.

In today's world, women are taking lead in almost every sphere of life, their role in society is changing and also their lifestyle patterns are changing drastically. This is taking toll on their health and they are suffering from different problems such as physical and mental stress, menstrual disturbances and many problems related to infertility. These effects may differ from one female to other as per her *Prakriti*. In *Pitta Pradhan Prakriti*, there is predominance of *Ushna Tikshnadi Guna*, which shows effects on the

body like early graying of hairs, more pimples on face, etc.^[1] About the presence of *Artav* in *Stree Sharer*, Acharya Sushrut mentioned that *Artav* or ovum is *Agneya* due to *Tej Mahabhuta*^[2] and also there is predominance of *Tej Mahabhuta* in *Pitta Pradhan Prakriti Dasha*. This may show some effects on the Ovulation of *Pitta Pradhan Prakriti* female's i.e. possibility of earlier than the average 14th day of Ovulation mentioned in text. Hence the efforts have been made to know the effect of *Doshadhikya* on Ovulation in *Pitta Pradhan Prakriti* females. In present study, the word *Artav* is used as *Streebeej* i.e. Ovum.

AIMS AND OBJECTIVES

1. To assess the *Prakriti* of BAMS first-year female students by a special *Prakriti Parikshan Patrak* and to sort out *Pitta Pradhan Prakriti*.
2. To study the menstrual history of females by using special menstrual history case paper.
3. To study the day of Ovulation by BBT method with the help of a clinical thermometer.
4. To study the relation between *Pitta Pradhan Prakriti* females and the day of Ovulation.
5. To know the safe period and fertile period of *Pitta Pradhan Prakriti* females by knowing the day of Ovulation.
6. To correlate the day of Ovulation according to the BBT method with the day observed by follicular study by U.S.G.

MATERIAL AND METHODS

For assessment of *Pitta Pradhan Prakriti*, *Prakriti Parikshan* of 65 females was done by using *Prakriti Parikshan Patrak*. For the study of symptoms related to menstruation, menstrual history was taken in menstrual history case paper. For recording the Basal Body Temperature, temperature chart paper was prepared. In that, four cyclical readings of temperature were recorded and the day of Ovulation was predicted from observed readings. After taking written consent, U.S.G. of 10 *Pitta Pradhan Prakriti* females was done to justify the Ovulation by the BBT method.

Basal body temperature method

To know the time of Ovulation there are many methods, but the commonly used method is Basal Body Temperature (BBT). The reference related to this method is found in Novak's Textbook of Gynecology by Howard Jones.^[3] The reference found that the failure rate of fertility after confirmation of the day of Ovulation by BBT is 6.6%. So, it shows that the BBT method proves to be efficient in confirming the day of Ovulation. This research is done by Marshall in 1968. In this method, the volunteer is instructed to take her oral temperature daily before coming out of the bed, and record it on a chart. The body temperature maintaining throughout the first half of the cycle is raised to 0.5° to 1° F. following ovulation. The rise sustains throughout the second half of the cycle and falls about 2 days prior to the next period called biphasic pattern. There may be a drop in the temperature to about 0.5°F. before the rise and almost coincides with either LH surge or Ovulation. The demonstrable rise occurs about 2 days after the LH peak and with a peripheral level of progesterone to greater than 4 ng/ml.^[4]

Considering the above BBT method to detect Ovulation, the temperature was recorded individually with the help of a clinical thermometer. Oral Temperature was taken from the day 5th of menstrual cycle till observed a rise in temperature by 0.5° F. to 1° F. It is taken in the time, from 6 to 8 am before rising out of the bed and without taking tea or coffee. A temperature reading was taken for four cycles. In this first reading is for the pilot study and for the study three successive cyclical readings were taken and recorded in a temperature chart paper. By observing readings of three successive cycles the day of Ovulation was predicted. For this method the instrument used is the clinical thermometer having standard company and for the whole study thermometer of the same company was used.

Confirmation of the day of Ovulation by USG

Now a day's Ultra Sonography (U.S.G.) is the very common method use to determine the day of Ovulation by follicular study. So to confirm the day of

Ovulation by BBT method, follicular study of 10 females was done by USG. Females after completing the temperature readings of 4 cycles were selected randomly by taking written consent from the student. After finding the average day of Ovulation by the BBT method, the abdominal U.S.G. was done. In USG size and growth of the follicles were detected. The features of recent Ovulation are collapsed follicle, and presence of fluid in the pouch of Douglas.

Significance of detection of ovulation

It is important to know the fertile period, the day of Ovulation, for family planning by rhythm method, It is important in cases of sterility to advice intercourse during the days most favorable for conception. It is also helpful in the induction of Ovulation if there is failure to ovulate and in artificial insemination for the treatment of infertility.

OBSERVATIONS AND DISCUSSION

Based on observations found in the study the following points were discussed.

Prakriti, Menstrual Symptoms, Day of Ovulation by BBT method and Day of Ovulation by USG method:

Assessment of *Prakriti*

The distribution of *Prakriti* according to *Doshadhikya* was found, in females is given below.

| <i>Prakriti</i> | No. of females | Percentage |
|-------------------------------|----------------|------------|
| <i>Vata Pradhan Prakriti</i> | 07 females | 10.76% |
| <i>Pitta Pradhan Prakriti</i> | 30 females | 43.07% |
| <i>Kapha Pradhan Prakriti</i> | 28 females | 44.61% |

In *Pitta Pradhan Prakriti*, *Pitta Pradhan Vata* was 05 females and *Pitta Pradhan Kapha* was 25 females. Assessment of *Prakriti* was done by two methods with the help of *Prakriti Parikshan Patrak*, namely,

1) Percentage method 2) Gradation method

For the study only *Pitta Pradhan* females were selected.

Percentage method

All of us know about this method so I would like to discuss on gradation method

Gradation method

In *Ayurveda Ahara or Chikitsa* is based on Six *Rasa* i.e. *Madhur, Amla, Lavan, Katu, Tikta, Kashaya*.^[5] In these six *Rasa* mainly six *Gunas* are present i.e. *Guru, Laghu, Sheet, Ushna, Ruksha, and Snigdha*.^[6] And *Prakriti* is also based on *Gunas*.^[7] So, the *Lakshana* due to this 6 *Gunas* was given importance in the assessment of *Prakriti* by gradation method and was given grade 2 and *Lakshana* due to all other *Guna* given grade 1, By observing these two methods for the *Vinishaya* of *Prakriti* the *Prakriti Vinishaya* was found same, but the gradation method will helpful in future if there is the same percentage of particular *Dosha* in *Prakriti Vinishaya* and also more beneficial for the statistical study. In *Vata Prakriti - Lakshana* due to *Ruksha, Laghu, and Sheeta Guna* had given the points II. *Lakshana* due to other than this three *Guna* given the points I. In *Pitta Prakriti - Lakshana* due to *Ushna and Laghu Guna* are given the points II *Lakshana* due to other than this two *Guna* given the points I, *Laghu* is the *Guna* of *Pitta* given by *Vagbhata*.^[8] In *Kapha Prakriti - Lakshana* due to *Snigdha, Sheeta, Guru Guna* given the points II.

Lakshana due to other than this three *Guna* given the points I, By doing these two methods for the *Vinishaya* of *Prakriti* we found that the *Prakriti Vinishaya* is the same, but this gradation method will help in future if there is the same percentage of particular *Dosha* in *Prakriti Vinishaya*. It is also more beneficial for statistical study.

Menstrual history

After taking menstrual history of 30 *Pitta Pradhan* females associated menstrual symptoms i.e. symptoms before menses and menstruation are observed are presented here.

Age at Menarche

| Age | No. of females | Percentage | Pitta Vata | Pitta Kapha |
|--------|----------------|------------|------------|-------------|
| 13 yrs | 11 | 36.66% | 00 | 11 |
| 14 yrs | 14 | 46.66% | 03 | 11 |
| 15 yrs | 05 | 16.66% | 02 | 03 |

Reference about the age of menarche in Ayurved text given is 12 yrs^{[9],[10]} and in modern text it is between 10 to 16 years.^[11] Due to *Ushna, Tikshnadi, Guna* of *Pitta, Pitta Pradhan Prakriti* females might be early menarche. But from observed readings it is noted that the age of menarche between 13 to 14 years was found in maximum females. Thus it concluded that the age of menarche found in *Pitta Pradhan Prakriti* is neither early nor late but it is in the average.

Days of Bleeding

| Days | No. of females | Percentage | Pitta Kapha | Pitta Vata |
|-------------|----------------|------------|-------------|------------|
| 3 days | 04 | 13.33% | 02 | 02 |
| 4 days | 11 | 36.66% | 11 | 00 |
| 5 days | 12 | 40% | 09 | 03 |
| More than 5 | 03 | 10% | 03 | 00 |

Range about days of bleeding given in Ayurvedic and Modern text is 3 to 7 days and the average is 4 days. But in the present study 5 days bleeding was found in maximum females. It may be due to *Ushna, Tikshna, Sar, Drava Guna* of *Pitta dosha*, and due to *Ashrayashrayi Sambandha* with *Rakta dhatu*. It shows more number of days of bleeding concerning average days i.e. 4th day.

Nature of Bleeding

| Nature of bleeding | No. of females | Percentage | Pitta Kapha | Pitta Vata |
|--------------------|----------------|------------|-------------|------------|
| Profuse | 06 | 20% | 05 | 01 |
| Moderate | 22 | 73.33% | 18 | 04 |
| Scanty | 02 | 07.33% | 02 | 00 |

In *Pitta Pradhan, Prakriti* due to *Ushna, Tikshna Guna* of *Pitta dosha*, the nature of bleeding might be profuse, but from the observed reading is concluded that moderate bleeding was found in maximum females. It may be due to *Anubandha* of *Kapha Dosha* in *Prakriti*. It is decided by the use of sanitary pads per day.

Associated Menstrual symptoms

| SN | Symptoms | No. of females | Percentage |
|-----|-----------------------|----------------|------------|
| 1. | Pain in lower abdomen | 25 | 83.33% |
| 2. | Back Pain | 18 | 60% |
| 3. | Weakness | 17 | 56.66% |
| 4. | Smell | 15 | 50% |
| 5. | Pain in calf muscle | 14 | 46.66% |
| 6. | Hot Feeling | 14 | 46.66% |
| 7. | Loss of appetite | 12 | 40% |
| 8. | Excess Urine | 08 | 26.66% |
| 9. | Headache | 08 | 26.66% |
| 10. | Pimples | 08 | 26.66% |

In all associated menstrual symptoms, Pain in the abdomen was observed in maximum females. When there is pain it is due to *Vata Dosha* and may be due to the disturbance in the function of *Pitta Dosha*, showing its effect on the *Mulsthana* of *Pitta Dosha* i.e. *Nabhi Amashaya*. Same way changes in lifestyle, diet, routine work and mental stress all these factors also prone to this symptom.

Days of Ovulation observed by BBT method

| SN | Day of Ovulation in 1 st cycle | Day of Ovulation in 1 st cycle | Day of Ovulation in 1 st cycle | Average day of Ovulation |
|----|---|---|---|--------------------------|
| 1. | 14 | 15 | 14 | 14 |
| 2. | 12 | 14 | 14 | 14 |
| 3. | 15 | 14 | 14 | 14 |

| | | | | |
|-----|----|----|----|----|
| 4. | 15 | 13 | 15 | 15 |
| 5. | 13 | 15 | 15 | 15 |
| 6. | 14 | 15 | 15 | 15 |
| 7. | 13 | 15 | 15 | 15 |
| 8. | 16 | 14 | 16 | 16 |
| 9. | 16 | 14 | 16 | 16 |
| 10. | 15 | 17 | 17 | 17 |
| 11. | 13 | 14 | 13 | 13 |
| 12. | 14 | 13 | 14 | 14 |
| 13. | 12 | 12 | 14 | 12 |
| 14. | 15 | 15 | 15 | 15 |
| 15. | 11 | 11 | 11 | 11 |
| 16. | 14 | 13 | 14 | 14 |
| 17. | 16 | 15 | 15 | 15 |
| 18. | 14 | 14 | 15 | 14 |
| 19. | 14 | 16 | 16 | 16 |
| 20. | 15 | 15 | 16 | 15 |
| 21. | 15 | 16 | 15 | 15 |
| 22. | 14 | 15 | 15 | 15 |
| 23. | 15 | 15 | 14 | 15 |
| 24. | 16 | 15 | 16 | 15 |
| 25. | 15 | 14 | 15 | 15 |
| 26. | 15 | 15 | 16 | 15 |
| 27. | 15 | 15 | 14 | 15 |
| 28. | 14 | 14 | 15 | 15 |
| 29. | 16 | 15 | 16 | 16 |
| 30. | 17 | 17 | 15 | 17 |

The average range of days of Ovulation given in Ayurvedic text is 12 to 16 days^[12-14] and in modern text it is from 13 to 17 days^[15] considering 28 days of menstrual cycle. Days of Ovulation found in this study in the range between 11 to 18 days. But in Pitta

Pradhan Prakriti due to Ushna, Tikshnadi Guna of Pitta it might be early. Ovulation on the 15th day found in maximum females' i.e. 43.33% and Ovulation on the 14th day found in 23.33%. So we can say that in almost 67% of Pitta Pradhan females, the day of Ovulation is 14th and 15th day. By the BBT method we found a temperature rise in the range of 0.5°F to 0.7°F. In the text the reference about this is 0.5° to 1°F. For this statistical method used is;

Test of Correlation - By this test it is stated that the maximum rise in temperature leads to Ovulation and the correlation is for 3 cycles are 0.79 to 0.87 so it is highly positive.

Day of Ovulation by USG method

| Day of Ovulation | No. of Females | Percentage |
|------------------|----------------|------------|
| 11 | 01 | 3.3% |
| 12 | 01 | 3.3% |
| 13 | 01 | 3.3% |
| 14 | 07 | 23.33% |
| 15 | 13 | 43.33% |
| 16 | 05 | 16.66% |
| 17 | 01 | 3.3% |
| 18 | 01 | 3.3% |

For confirmation, the day of Ovulation found by BBT method was also compared with the U.S.G. method. For this 10 females are investigated by USG for follicular study. According to this method the days of Ovulation were found in the range of 14 to 17 days.

Comparison between B.B.T. and U.S.G. method

| SN | Day of Ovulation by USG | Day of Ovulation by BBT |
|----|-------------------------|-------------------------|
| 1. | 14 | 14 |
| 2. | 14 | 14 |
| 3. | 14 | 14 |

| | | |
|-----|----|----|
| 4. | 15 | 15 |
| 5. | 15 | 15 |
| 6. | 15 | 15 |
| 7. | 16 | 15 |
| 8. | 16 | 16 |
| 9. | 16 | 16 |
| 10. | 17 | 17 |

The day of Ovulation by BBT and USG method was found all most same except one female showed variation of one day. So the day of Ovulation found in *Pitta Pradhan Prakriti* females is 14th to 15th day by both the methods. And the range is found from the 11th day to the 18th day. It is proved statistically by using the "t" test.

CONCLUSION

The fruitful conclusions which have emerged through the discussion of observational study are being presented here. After the assessment of *Prakriti*, *Pitta Pradhan Prakriti* was found in 30 females. The associated menstrual symptoms in *Pitta Pradhan Prakriti* females, showed the following results. Age of menarche was found 13-14 years.in 25 females i.e. 83.33%. Days of bleeding was found 4-5 days in 23 females i.e.76.66%. Nature of bleeding was found moderate in 22 female's i.e.73.33%. Among all the associated symptoms pain in lower abdomen was found 25 females i.e. 83.33%. Days of Ovulation by B.B.T. method in *Pitta Pradhana* females were found in the range between 11th to 18th day's and 14th and 15th day found in maximum i.e. in 20 females. Rise in temperature on the day of Ovulation was found in the range of 0.5°F to 0.7°F. Day of Ovulation by the USG method in *Pitta Pradhan* females is 14th, 15th and 16th days. With the help of statistical conclusions also it is proved that there is no significant difference in the estimated day of Ovulation by BBT and the USG method that means both methods showed equality. For more accuracy, a large sample size should be

taken and comparison with *Vata Pradhan Prakriti* and *Kapha Pradhana Prakriti* females should be done.

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