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PREVALENCE OF RACANĀTMAKA *VIKṚTI OF KṢETRA AMONG* WOMEN WITH STRĪ VANDHYATVA: A CROSS-SECTIONAL SURVEY STUDY

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ABSTRACT **Background:** Ayurveda describes successful conception through the harmonious functioning of tu, K etra, Ambu, and B ja. K etra represents the reproductive field and is therefore central to conception, implantation, and maintenance of pregnancy. Structural abnormalities of the female reproductive organs may interfere with these processes and contribute to Str Vandhyatva (female infertility).Aim: To observe the prevalence of various Racan tmaka Vik ti of K etra among women presenting with infertility. Materials and Methods: A hospital-based cross-sectional observational survey was conducted in the Department of Pras ti Tantra & Str Roga, J. S. Ayurveda Mahavidyalaya and P. D. Patel Ayurveda Hospital, Nadiad. Women aged 20–40 years with primary or secondary infertility and diagnosed reproductive-organ abnormalities were included. Clinical history, gynaecological examination, ultrasonography (USG) and hysterosalpingography (HSG) findings were recorded. Fifty patients were included for statistical analysis. Descriptive statistics and chi-square goodness-of-fit tests were applied. Results: Among 50 patients, the largest age group was 31–35 years (36%). Primary infertility was present in 64% and secondary infertility in 36%. Uterine factors constituted 40% of the anatomical findings, followed by ovarian factors (34%) and tubal factors (26%); the difference among these three organ systems was not statistically significant ($\chi^2=1.48$, $p=0.477$). Acquired abnormalities were observed in 80% and congenital abnormalities in 20%, with a statistically significant difference ($^2=18.00$, $p<0.001$). Ovarian PCOS, as categorized in the thesis, was the most frequent specific finding (20%), followed by acquired tubal pathology (14%) and uterine fibroid (12%). The distribution of the ten specific abnormality categories was not statistically significant ($\chi^2=9.20$, $p=0.419$). Primary infertility showed a statistically significant predominance ($\chi^2=3.92$, $p=0.0477$). **Conclusion:** The study demonstrates a substantial occurrence of Racan tmaka Vik ti of K etra among the selected women with Str Vandhyatva. Uterine, ovarian and tubal factors were all represented, while acquired abnormalities predominated over congenital abnormalities. Comprehensive anatomical evaluation using appropriate imaging, together with clinical and Ayurvedic assessment, may assist in the evaluation and management of infertility.

KEYWORDS : K etra; Racanātmaka Vik ti; Str Vandhyatva; infertility; female reproductive organs; uterine factor; tubal factor; ovarian factor; Ayurveda .

INTRODUCTION

Infertility is an important reproductive-health problem with physical, psychological and social consequences. The dissertation on which this article is based approaches infertility from the Ayurvedic concept of the reproductive field, *K etra*, and specifically examines structural abnormalities of the female reproductive organs in women with *Str Vandhyatva*.[1]

Ayurveda explains conception through *Garbha Sambhava S magr* , comprising *tu*, *K etra*, *Ambu* and *B ja*. *Su ruta* compares successful conception with the development of a healthy sprout when the essential conditions of season, land, water and seed are appropriate. In this framework, *K etra* is the site that supports fertilisation, implantation and subsequent development.[2] The thesis interprets *K etra* broadly to include the female reproductive organs, including the ovaries, fallopian tubes, uterus, supporting structures, vagina and external genital organs.[3]

Racan tmaka Vik ti of *K etra* may be congenital or acquired.[4] The thesis discusses congenital conditions such as Müllerian anomalies and tubal developmental abnormalities and acquired conditions including uterine fibroid, endometrial abnormalities, adenomyosis, tubal pathology, PCOS, endometrioma and ovarian cyst.[5] Such abnormalities may interfere with ovulation, sperm transport, fertilisation, implantation or maintenance of pregnancy.

Although infertility evaluation commonly considers hormonal, ovulatory and other functional factors, the present dissertation specifically focuses on structural findings identified by clinical examination and imaging. The study was therefore undertaken to observe the prevalence and pattern of *Racan tmaka Vik ti* of *K etra* among women presenting with infertility.[6]

Aim and Objectives

Aim:

Screening of *Str Vandhyatva* patients and observe the prevalence of various *Racan tmaka Vik ti* of *K etra* (female reproductive organs).

Objectives:

To do a literary study on the anatomy of female reproductive organs.

To do a literary study of *Stri Vandhyatva*.

To do the survey to observe the prevalence of *Racana tmaka vikṛti* of *K etra* (female reproductive organs) causing *Stri Vandhyatva*.

Materials and Methods

This cross-sectional, hospital-based observational survey was conducted in the Department of *Pras ti Tantra* & *Str Roga*, J. S. Ayurveda Mahavidyalaya and P. D. Patel Ayurveda Hospital, Nadiad, Gujarat. Women aged 20–40 years attending the OPD/IPD with infertility were screened for

eligibility. A total of 116 women were screened, of whom 50 women with relevant anatomical abnormalities were included for statistical analysis, as reported in the dissertation. Convenience sampling was employed for the selection of participants.

The inclusion criteria comprised female patients between 20 and 40 years of age suffering from either primary or secondary infertility and diagnosed with anatomical abnormalities of the reproductive organs, including congenital anomalies of the female genital organs and acquired abnormalities involving the uterus, cervix, ovaries, fallopian tubes and vagina. The exclusion criteria included patients below 20 years and above 40 years of age, women with infertility due to non-anatomical causes, and patients with anovulatory disorders, hormonal imbalance, thyroid disorders, hypothalamic disorders, pituitary disorders, vaginitis, cervical cellulitis or severe systemic illness. Patients with male factor infertility and those unwilling to participate in the study were also excluded. A structured case-record proforma was used for assessment and documentation of demographic data, infertility history, menstrual and obstetric history, personal history, clinical findings and relevant Ayurvedic assessment. Gynaecological examination was performed, and ultrasonography (USG) of the uterus and adnexa, along with hysterosalpingography (HSG) findings, was reviewed. The anatomical findings were classified according to the affected organ system, the nature of the abnormality (congenital or acquired) and the specific anatomical abnormality identified.

Statistical analysis was performed using frequencies and percentages for the observed variables. Chi-square goodness-of-fit tests were applied to assess the distribution of affected organ systems, the nature of anatomical abnormalities, specific anatomical abnormalities and the type of infertility, as well as to compare the study findings with the global distribution presented in the dissertation.

RESULTS

Anatomical abnormalities

Affected organ system	n	%
Uterine factor	20	40
Tubal factor	13	26
Ovarian factor	17	34

Uterine factors accounted for 40% of the sample, ovarian factors for 34% and tubal factors for 26%. The chi-square test did not show a statistically significant difference among the three organ-system categories ($\chi^2=1.48$, df=2, p=0.4771).

Specific abnormality (as categorized in thesis)	n	%
Uterine – congenital (Müllerian)	4	8
Uterine – fibroid	6	12
Uterine – endometrial	3	6
Uterine – adenomyosis	4	8
Uterine – positional/other	3	6
Tubal – congenital	6	12
Tubal – acquired	7	14
Ovarian – PCOS	10	20
Ovarian – endometrioma	4	8
Ovarian – cyst	3	6

Ovarian PCOS, as classified in the thesis, was the most frequent specific finding (20%), followed by acquired tubal pathology (14%) and uterine fibroid (12%). The distribution across the ten specific categories was not statistically significant ($\chi^2=9.20$, df=9, p=0.4190).

Congenital versus acquired abnormalities

Nature	n	%
Congenital	10	20
Acquired	40	80

Acquired abnormalities were significantly more frequent than congenital abnormalities ($\chi^2=18.00$, df=1, p<0.001).

Primary versus secondary infertility

Primary infertility was present in 64% and secondary infertility in 36%. The chi-square goodness-of-fit test showed a statistically significant difference ($\chi^2=3.92$, df=1, p=0.0477).

DISCUSSION

The findings of this hospital-based survey demonstrate a varied pattern of reproductive-organ abnormalities among the selected women with infertility. The Ayurvedic framework used in the dissertation places *K etra* among the essential components of *Garbha Sambhava S magr* . The study therefore interprets the structural integrity of the female reproductive organs as an important component of reproductive capacity.

The predominance of the 31–35-year age group may reflect the timing of infertility evaluation in the study population. Primary infertility constituted nearly two-thirds of the sample and was statistically more frequent than secondary infertility.

The thesis discusses this in relation to congenital/developmental abnormalities and early reproductive disorders, while also noting that acquired pathology can accumulate during reproductive life.[7]

Uterine factors were the most frequent organ-system category (40%), followed by ovarian (34%) and tubal (26%) factors. However, the difference was not statistically significant. This is important because it indicates that, within this sample, the data do not establish one organ system as statistically predominant over the others despite the higher observed percentage for uterine factors.[8]

Acquired abnormalities were significantly more frequent than congenital abnormalities. The dissertation discusses possible contributors such as infections, inflammatory disease, hormonal disturbances, lifestyle factors and delayed childbearing.[9] These explanations should be regarded as interpretive considerations rather than causal conclusions from a cross-sectional study.

PCOS was the most frequently recorded specific category in the thesis (20%). Because the present study categorized PCOS under ovarian findings, this result is reported as part of the thesis classification.[10] The overall ten-category distribution was not statistically significant, supporting the heterogeneous pattern of findings rather than a single dominant abnormality.[11]

The study also recorded frequent irregular meal timing, *Vi am ana*, *Viruddha h ra* and Vi ama/*Manda Agni*.[12] The dissertation interprets these observations through the Ayurvedic concepts of *Agni*, *Do a Du i* and *K etra Du i*. Since this was an observational survey without a non-infertile control group or causal modelling, these dietary observations should be considered associations observed within the study population.[13]

The comparison with the global estimates presented in the thesis showed uterine 40%, tubal 26% and ovarian 34% in the current study, compared with 10–15%, 20–35% and 25–40%, respectively, in the cited global estimates. The thesis reports a statistically significant difference in the overall distribution ($^2=18.21$, p<0.001), while noting that the study population, diagnostic criteria and referral characteristics may account for differences.

CONCLUSION

In the selected cohort of women with *Str Vandhyatva*, *Racan tmaka Vik ti* of *K etra* showed a varied distribution involving uterine, ovarian and tubal factors. Uterine factors constituted 40%, ovarian factors 34% and tubal factors 26%, without a statistically significant difference among these three

categories. Acquired abnormalities (80%) were significantly more frequent than congenital abnormalities (20%). Primary infertility (64%) was significantly more frequent than secondary infertility (36%).

The findings support the relevance of evaluating the structural integrity of *K etra* during infertility assessment. The study also supports the Ayurvedic emphasis on a healthy *K etra* as an essential prerequisite for successful conception. Larger, multicentric studies with standardized diagnostic definitions and appropriate control groups are needed to further evaluate these associations.

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