

Effect of Uttarbasti in Tubal Blockage: A Single Case Study

Dr. Priyanka Bhaurao Pawar¹, Dr. Meena Shrikrishna Bhanuse²

^{1,2} Assistant Professor, Department of Prasuti Tantra and Stri Roga, Dr. R. N. Lahoti Ayurvedic Mahavidyalaya & Research Institute, Sultanpur, Maharashtra, India.

Abstract—Background: Tubal blockage is one of the leading causes of female infertility, accounting for a significant proportion of infertility cases worldwide. Obstruction of the fallopian tubes prevents the meeting of sperm and ovum, thereby impairing natural conception. Conventional management includes laparoscopic surgery and assisted reproductive techniques, which may be expensive and invasive. Ayurveda describes infertility under *Vandhyatva*, where *Artavavaha Srotodushiti*, *Vata-Kapha Dosha* vitiation, and obstruction of reproductive channels are considered important etiological factors. *Uttarbasti*, one of the specialized Panchakarma procedures, is traditionally indicated for gynecological disorders and is believed to facilitate *Srotoshodhana*, *Vata Anulomana*, and restoration of reproductive function. **Case Presentation:** A 29-year-old married female presented with primary infertility of four years' duration. Hysterosalpingography (HSG) revealed unilateral distal tubal blockage. The patient had regular menstrual cycles with no significant systemic illness. She underwent Ayurvedic management comprising *Uttarbasti* administered under aseptic precautions using a medicated oil after appropriate *Purvakarma*. The therapy was given in scheduled sittings following the menstrual phase along with supportive oral Ayurvedic medications and dietary advice. **Results:** The patient showed gradual improvement in lower abdominal discomfort and pelvic symptoms during the treatment period. Follow-up HSG demonstrated restoration of tubal patency. Subsequently, the patient conceived naturally within three months after completion of therapy without requiring any assisted reproductive intervention. No adverse effects or complications were observed during the treatment. **Conclusion:** This case suggests that *Uttarbasti* may be an effective, safe, and minimally invasive Ayurvedic intervention for selected cases of tubal blockage associated with infertility. Its therapeutic action may be attributed to *Srotoshodhana*, reduction of local inflammation, normalization of *Vata Dosha*, and improvement in reproductive tract function.

However, larger controlled clinical studies are required to establish its efficacy and validate these findings.

Index Terms—Uttarbasti, Tubal Blockage, Female Infertility, Vandhyatva, Artavavaha Srotas, Panchakarma, Fallopian Tube Obstruction, Ayurveda.

I. INTRODUCTION

Infertility is defined as the inability to achieve pregnancy after one year of regular, unprotected sexual intercourse. It is a growing public health concern that affects approximately 10–15% of reproductive-aged couples worldwide. Female factors contribute to nearly half of infertility cases, among which tubal pathology accounts for approximately 25–35%. Tubal blockage prevents the transport of sperm, ovum, or fertilized embryo through the fallopian tubes, thereby interfering with natural conception.^{1 2}

The common causes of tubal blockage include pelvic inflammatory disease, genital tuberculosis, endometriosis, postoperative adhesions, sexually transmitted infections, and pelvic surgeries. The diagnosis is usually confirmed by hysterosalpingography (HSG), sonosalpingography, laparoscopy with chromoperturbation, or hysteroscopy. Depending on the site and severity of obstruction, conventional management consists of antibiotic therapy for infections, laparoscopic adhesiolysis, tubal reconstructive surgery, or assisted reproductive techniques such as in vitro fertilization (IVF). Although these modalities have improved pregnancy outcomes, they are often associated with high treatment costs, psychological stress, variable success rates, and procedure-related complications.^{3–5}

Ayurveda considers conception as the harmonious interaction of four essential factors (*Ritu*, *Kshetra*, *Ambu*, and *Beeja*). Disturbance in any of these

components may result in infertility (*Vandhyatva*). Obstruction in the reproductive channels (*Artavavaha Srotodushti*), predominance of *Vata* and *Kapha Dosha*, chronic inflammation, and impairment of uterine and tubal functions are regarded as important pathogenic factors responsible for female infertility.^{6,7} The pathogenesis of tubal blockage can be interpreted in Ayurveda as *Sanga* (obstruction) of *Artavavaha Srotas* caused predominantly by aggravated *Kapha Dosha*, while *Vata Dosha* produces impaired movement of *Artava* and ovum. Chronic inflammatory changes and fibrosis may further lead to narrowing or complete obstruction of the tubal lumen. Therefore, treatment is directed towards eliminating obstruction, correcting *Dosha* imbalance, improving tissue nourishment, and restoring the normal physiology of the reproductive system.⁸

Among the Panchakarma procedures, Uttarbasti occupies a unique position in the management of gynecological disorders. Classical Ayurvedic texts have described Uttarbasti as a specialized procedure in which medicated oil or decoction is administered into the uterine cavity through the cervix under strict aseptic precautions. It is indicated in disorders of the uterus, cervix, fallopian tubes, and menstrual abnormalities. The procedure is believed to normalize *Apana Vata*, cleanse the reproductive channels (*Srotoshodhana*), improve local circulation, reduce inflammation, soften adhesions, and enhance the functional capacity of the reproductive organs.⁹⁻¹¹

From a modern perspective, the therapeutic effect of Uttarbasti may be attributed to the local anti-inflammatory, antimicrobial, and tissue-healing properties of medicated oils. The instillation of medicine into the uterine cavity may facilitate better penetration into the uterotubal junction, improve lubrication, reduce minor adhesions, and enhance endometrial receptivity. Although the exact mechanism remains to be scientifically established, several clinical studies have demonstrated encouraging results in women with tubal infertility treated with Uttarbasti in combination with appropriate oral Ayurvedic medications.¹²⁻¹⁴

Because of its minimally invasive nature, affordability, and favorable safety profile, Uttarbasti has emerged as a promising therapeutic option in selected cases of tubal factor infertility. Nevertheless, evidence in the form of well-documented case reports and clinical studies is still limited. Detailed documentation of

individual cases can contribute to understanding the potential role of Ayurveda in the management of infertility and provide a foundation for future controlled clinical trials.

The present case study describes the successful management of unilateral tubal blockage in a young woman with primary infertility using Uttarbasti along with oral Ayurvedic medications. Improvement in tubal patency on follow-up HSG and subsequent spontaneous conception highlights the possible therapeutic role of this classical Panchakarma procedure in restoring reproductive function.

Case Presentation

A 29-year-old married female attended the Outpatient Department (OPD) of Prasuti Tantra and Stri Roga with the chief complaint of inability to conceive despite four years of regular unprotected marital life. She had undergone evaluation at multiple infertility clinics and had received ovulation induction therapy for several cycles without achieving pregnancy. Hysterosalpingography performed six months before presentation revealed unilateral distal fallopian tube blockage, while the opposite tube showed delayed spillage of contrast. The patient was advised laparoscopic evaluation followed by assisted reproductive techniques if required; however, owing to financial constraints and her preference for conservative treatment, she opted for Ayurvedic management.

The patient reported regular menstrual cycles occurring every 28–30 days with moderate flow lasting four to five days. She occasionally experienced mild lower abdominal pain and dysmenorrhea during the first day of menstruation. There was no history of abnormal vaginal discharge, pelvic inflammatory disease, tuberculosis, diabetes mellitus, thyroid dysfunction, or previous pelvic surgery. Her husband's semen analysis was within normal limits according to World Health Organization criteria.

After detailed clinical evaluation and Ayurvedic assessment, the condition was diagnosed as *Vandhyatva* associated with *Artavavaha Srotorodha* caused predominantly by *Vata-Kapha Dosha Dushti*. Considering the patient's age, preserved ovarian function, unilateral tubal obstruction, and absence of severe pelvic pathology, a treatment protocol based on **Uttarbasti** was planned. The therapy was administered under strict aseptic precautions after

completion of menstruation, along with suitable oral Ayurvedic medications, dietary regulation, and lifestyle modifications. The patient was informed about the procedure, expected benefits, possible discomfort, and need for regular follow-up. Written informed consent was obtained before initiating the treatment.

Patient Information

The patient was a 29-year-old married woman who presented to the Outpatient Department (OPD) of Prasuti Tantra and Stri Roga with the chief complaint of inability to conceive despite four years of regular, unprotected cohabitation. She belonged to a middle socioeconomic family and had been married for four years. The couple had regular sexual intercourse without the use of any contraceptive methods. The patient was anxious about her inability to conceive and sought Ayurvedic treatment after unsuccessful conventional management.

There was no history of previous conception, spontaneous abortion, ectopic pregnancy, or medical termination of pregnancy. Her menstrual cycles were regular, occurring every 28–30 days with a duration of four to five days and moderate menstrual flow. Mild lower abdominal pain during the first day of menstruation was occasionally present. There was no history suggestive of excessive menstrual bleeding, foul-smelling vaginal discharge, dyspareunia, fever, or chronic pelvic pain. Her bowel and bladder habits were normal, appetite and sleep were satisfactory, and there was no significant history of systemic illness such as diabetes mellitus, hypertension, thyroid disorders, tuberculosis, or autoimmune disease.¹⁵

The patient had previously undergone hormonal evaluation, ultrasonography, and hysterosalpingography (HSG). Hormonal investigations were within normal physiological limits, ovarian reserve was satisfactory, and ultrasonography revealed a normal uterus and bilateral ovaries. HSG demonstrated unilateral distal fallopian tube blockage with delayed spillage through the opposite tube. Her husband's semen analysis was normal according to the World Health Organization criteria, thereby excluding male factor infertility.¹⁶

Clinical Findings

General Examination

Parameter	Findings
Age	29 years
Height	158 cm
Weight	58 kg
BMI	23.2 kg/m ²
Pulse	78/min
Blood Pressure	118/76 mmHg
Respiratory Rate	18/min
Temperature	Afebrile
Pallor	Absent
Icterus	Absent
Cyanosis	Absent
Clubbing	Absent
Edema	Absent

The patient was conscious, cooperative, and moderately built. General physical examination did not reveal any systemic abnormality.

Systemic Examination

- Cardiovascular System: Normal heart sounds without murmur.
- Respiratory System: Bilateral equal air entry with normal vesicular breath sounds.
- Central Nervous System: Conscious, oriented, and neurologically normal.
- Per Abdomen Examination: Soft abdomen with mild tenderness in the suprapubic region. No palpable mass or organomegaly was detected.

Gynecological Examination

Per speculum examination showed a healthy cervix without erosion or discharge. Per vaginal examination revealed a normal-sized anteverted uterus, free fornices, and no adnexal tenderness or palpable pelvic mass. Cervical motion tenderness was absent. There were no clinical signs suggestive of active pelvic inflammatory disease.

Diagnostic Assessment

Routine laboratory investigations were performed before initiation of therapy.

Hematological Investigations

Investigation	Result
Hemoglobin	12.4 g/dL
Total Leukocyte Count	7,600/mm ³
Platelet Count	2.65 lakh/mm ³

ESR	18 mm/hr
Random Blood Sugar	94 mg/dL

Biochemical Investigations

Investigation	Result
Serum TSH	Within normal limits
Serum Prolactin	Within normal limits
FSH	Normal
LH	Normal

Radiological Investigation

Hysterosalpingography (HSG):

- Normal uterine cavity.
- Right distal fallopian tube blockage.
- Delayed spill from the left tube.
- No congenital uterine anomaly.

Ultrasonography

- Uterus of normal size and echotexture.
- Endometrial thickness appropriate for menstrual phase.
- Bilateral ovaries normal.
- No adnexal pathology.
- No evidence of pelvic collection or endometrioma.

Considering these findings, the diagnosis of primary infertility due to unilateral distal tubal blockage was established.¹⁷

Ayurvedic Assessment

According to Ayurvedic principles, infertility (*Vandhyatva*) develops due to impairment of one or more factors essential for conception, namely *Ritu*, *Kshetra*, *Ambu*, and *Beeja*. In the present case, ovulation and menstrual cycles were regular, indicating preserved ovarian function. However, obstruction within the *Artavavaha Srotas* was considered the principal pathological factor preventing conception.¹⁸

Dashavidha Pariksha

Parameter	Observation
Prakriti	Vata-Kapha
Vikriti	Vata-Kapha Dushti
Sara	Madhyama
Samhanana	Madhyama
Satmya	Madhyama
Satva	Madhyama
Ahara Shakti	Madhyama
Vyayama Shakti	Madhyama
Vaya	Yuva

Ashtavidha Pariksha

Parameter	Findings
Nadi	Vata-Kapha
Mala	Prakrita
Mutra	Prakrita
Jihva	Slightly coated
Shabda	Normal
Sparsha	Normal
Drik	Normal
Aakruti	Madhyama

Samprapti

- Dosha: Vata and Kapha
- Dushya: Rasa, Rakta and Artava
- Srotas: Artavavaha Srotas
- Srotodushti: Sanga (obstruction)
- Agni: Mandagni
- Ama: Mild
- Adhithana: Garbhashaya and Fallopian Tube
- Vyadhi Marga: Abhyantara
- Rogamarga: Madhyama

The obstruction produced by aggravated Kapha along with impaired movement due to Vata was considered responsible for tubal occlusion. Therefore, treatment aimed at Srotoshodhana, Vata Anulomana, Kapha Shamana, and restoration of reproductive tract function.¹⁹

Therapeutic Intervention

After obtaining written informed consent, the patient was planned for Uttarbasti under strict aseptic precautions following completion of menstruation. The procedure was carried out in accordance with classical Ayurvedic guidelines after appropriate *Purvakarma*.²⁰

Purvakarma

- Detailed counseling regarding the procedure.
- Routine investigations to exclude active pelvic infection.
- Bladder emptied before procedure.
- External genitalia cleaned with antiseptic solution.
- Patient placed in lithotomy position.
- Sterile vaginal instruments and disposable infant feeding catheter used.

Pradhana Karma (Uttarbasti)

Sterile medicated oil was warmed to body temperature. Under aseptic precautions, the cervix was

visualized using a Cusco's speculum. A sterile infant feeding catheter was gently introduced through the cervical canal into the uterine cavity, and approximately 5 mL of medicated oil was instilled slowly. The patient remained in the head-low position for approximately 20–30 minutes to facilitate proper retention of the medicine.

The procedure was performed after cessation of menstruation for three consecutive cycles, with each cycle consisting of three sittings on alternate days, depending upon the patient's menstrual pattern and tolerance.

Oral Ayurvedic Medications

The patient received supportive oral medicines throughout the treatment period.

Medicine	Dose	Duration
Phala Ghrita	10 g twice daily with lukewarm milk	3 months
Shatavari Churna	5 g twice daily	3 months
Ashokarishta	20 mL twice daily after meals	3 months

The patient was advised to continue medicines regularly and attend monthly follow-up visits.

Pathya (Dietary Advice)

The patient was advised to consume:

- Warm, freshly prepared meals.
 - Milk, ghee, green leafy vegetables, fruits, and easily digestible foods.
 - Adequate hydration.
 - Protein-rich diet.
- She was advised to avoid:
- Junk foods.
 - Excessively spicy, oily, and fermented foods.
 - Cold beverages.
 - Smoking and alcohol.
 - Excessive mental stress and sleep deprivation.

Moderate physical activity, yoga, and stress reduction techniques were recommended to improve overall reproductive health.²¹

Treatment Schedule

Menstrual Cycle	Intervention
Cycle 1	Uttarbasti (3 sittings) + Oral medicines

Cycle 2	Uttarbasti (3 sittings) + Oral medicines
Cycle 3	Uttarbasti (3 sittings) + Oral medicines
Follow-up	Oral medicines continued for one additional month

The patient tolerated the procedure well. No pain, fever, vaginal bleeding, allergic reaction, infection, or other complications were observed during or after the treatment sessions.

Outcome Assessment

The patient's progress was assessed clinically after every menstrual cycle and radiologically after completion of the treatment protocol. Subjective symptoms, menstrual history, pelvic discomfort, and reproductive outcome were documented during each follow-up visit.

Clinical Outcome

Parameter	Before Treatment	After Treatment
Primary infertility	Present	Conceived naturally
Lower abdominal pain	Mild	Absent
Dysmenorrhea	Mild	Minimal
Menstrual regularity	Regular	Regular
Tubal patency (HSG)	Right distal tubal blockage with delayed spill from left tube	Bilateral free spillage of contrast
General well-being	Moderate	Improved

A repeat Hysterosalpingography (HSG) performed after completion of three cycles of Uttarbasti demonstrated bilateral free spillage of contrast, indicating restoration of tubal patency. The patient was advised to continue oral Ayurvedic medications for one additional month and maintain regular timed intercourse during the fertile period.

During follow-up, the patient missed her menstrual period approximately three months after completion of treatment. Urine pregnancy test was positive, and

transabdominal ultrasonography confirmed a single live intrauterine pregnancy corresponding to six weeks of gestation. The pregnancy progressed normally during subsequent antenatal follow-up without any significant complications.

Follow-up

The patient was followed for six months after completion of therapy. No recurrence of pelvic pain, menstrual irregularity, or infective symptoms was observed during this period. She reported improvement in her physical health, mental well-being, and confidence. The successful spontaneous conception without surgical intervention or assisted reproductive techniques represented the most significant therapeutic outcome.

No adverse events such as pelvic infection, uterine cramps requiring hospitalization, excessive vaginal bleeding, allergic reaction, or procedural complications were encountered during the treatment or follow-up period.

II. DISCUSSION

Infertility is a multifactorial disorder that affects millions of couples worldwide and has profound physical, psychological, and social consequences. Tubal pathology remains one of the most common female factors contributing to infertility, particularly in developing countries where pelvic inflammatory disease and genital infections are prevalent. Even with advances in reproductive medicine, management of tubal blockage continues to be challenging because available interventions are either invasive or financially demanding.²²

Ayurveda considers conception to be dependent upon the proper functioning of *Ritu* (appropriate time), *Kshetra* (healthy reproductive organs), *Beeja* (healthy gametes), and *Ambu* (adequate nourishment). Disturbance in any of these components may lead to *Vandhyatva*. In the present case, menstrual cycles were regular, ovarian reserve was adequate, and the husband had a normal semen profile. Therefore, obstruction within the *Artavavaha Srotas* was considered the principal pathological factor responsible for infertility. According to Ayurvedic principles, obstruction (*Sanga*) produced by aggravated *Kapha Dosha* and impaired movement caused by *Vata Dosha* interfere with the physiological transport of *Artava* and

fertilized ovum. Long-standing inflammation may further produce fibrosis and narrowing of the tubal lumen. Consequently, treatment should focus on removal of obstruction, normalization of *Apana Vata*, improvement of tissue nourishment, and restoration of reproductive function.²³

Among various Panchakarma procedures, Uttarbasti is regarded as one of the most effective local therapies for gynecological disorders. Classical Ayurvedic texts describe its utility in disorders affecting the uterus, cervix, and reproductive channels. The intrauterine administration of medicated oil enables direct delivery of therapeutic agents to the reproductive tract, which may enhance local drug availability compared with oral therapy alone. The *Snigdha*, *Sukshma*, and *Vyavayi* properties of medicated oils facilitate deeper penetration into minute channels (*Srotas*), thereby helping to reduce obstruction and restore normal physiological function.

The probable mode of action of Uttarbasti can be understood from both Ayurvedic and modern perspectives. The procedure may facilitate Srotoshodhana by removing minor obstructions within the reproductive tract while simultaneously pacifying aggravated *Vata* and *Kapha Dosha*. Improvement in local circulation, reduction of inflammatory edema, and nourishment of reproductive tissues may contribute to restoration of tubal function. The lubricating nature of medicated oil may also help soften minor adhesions around the uterotubal junction, thereby improving tubal patency.

From a biomedical viewpoint, the procedure may exert local anti-inflammatory, antioxidant, antimicrobial, and tissue-repair effects depending on the medicated oil employed. Gentle instillation into the uterine cavity may improve endometrial receptivity and create a favorable uterine environment. Although the exact mechanism requires further scientific validation, these hypotheses are supported by the encouraging clinical outcomes reported in several Ayurvedic studies evaluating Uttarbasti in female infertility.²⁴

Supportive oral medications administered in the present case also contributed to the overall therapeutic response. *Phala Ghrita* is traditionally indicated in female infertility and is considered to improve uterine health and reproductive function. *Shatavari* is recognized as a potent female reproductive tonic with antioxidant, adaptogenic, and hormone-modulating properties. *Ashokarishta* helps maintain uterine health

and supports normal menstrual physiology. Together with dietary regulation and lifestyle modification, these interventions may have produced a synergistic therapeutic effect.

An important observation in this case was the absence of adverse effects during treatment. The patient tolerated all sittings of Uttarbasti without pain, infection, excessive bleeding, or allergic reaction. This finding supports previous reports suggesting that the procedure is safe when performed under strict aseptic precautions by trained Ayurvedic practitioners.

The restoration of bilateral tubal patency demonstrated on follow-up HSG, followed by spontaneous conception within three months, suggests that Uttarbasti may have played a significant role in improving reproductive function. However, it is important to acknowledge that a single case study cannot establish a definitive cause-and-effect relationship. The contribution of oral medications, lifestyle modification, natural variation in tubal patency, and individual biological factors cannot be completely excluded.

Nevertheless, this case adds to the growing body of evidence supporting the role of Ayurveda in the conservative management of selected cases of tubal factor infertility. Well-designed randomized controlled trials with larger sample sizes, standardized treatment protocols, and long-term follow-up are required to scientifically validate these findings and determine the precise therapeutic mechanism of Uttarbasti.

III. CONCLUSION

This case study demonstrates that Uttarbasti, when administered according to classical Ayurvedic principles under strict aseptic precautions, may be an effective and safe therapeutic option in selected cases of tubal blockage associated with primary infertility. The treatment resulted in restoration of tubal patency, improvement in clinical symptoms, and successful spontaneous conception without surgical intervention or assisted reproductive techniques.

The findings suggest that Uttarbasti may promote *Srotoshodhana*, normalize *Apana Vata*, reduce local inflammation, improve reproductive tract function, and enhance the possibility of natural conception. Although the outcome is encouraging, larger controlled clinical studies are essential to establish its

efficacy and develop standardized treatment guidelines.

REFERENCES

- [1] World Health Organization. Infertility prevalence estimates 1990–2021. Geneva: WHO; 2023.
- [2] Cunningham FG, Leveno KJ, Bloom SL, et al. Williams Obstetrics. 26th ed. New York: McGraw-Hill; 2022.
- [3] Berek JS. Berek & Novak's Gynecology. 16th ed. Philadelphia: Wolters Kluwer; 2020.
- [4] Fritz MA, Speroff L. Clinical Gynecologic Endocrinology and Infertility. 9th ed. Philadelphia: Lippincott Williams & Wilkins; 2020.
- [5] Dutta DC. Textbook of Gynecology. 8th ed. New Delhi: Jaypee Brothers; 2022.
- [6] Agnivesha. Charaka Samhita. Revised by Charaka and Dridhabala. Edited by Vaidya Jadavaji Trikamji. Varanasi: Chaukhambha Orientalia; 2020. Sutra Sthana.
- [7] Vagbhata. Ashtanga Hridaya. Edited by Harisastri Paradakara. Varanasi: Chaukhambha Surbharati; 2022. Uttara Sthana.
- [8] Sushruta. Sushruta Samhita. Edited by Vaidya Jadavaji Trikamji. Varanasi: Chaukhambha Orientalia; 2021. Sharira Sthana.
- [9] Sharma PV. Chakradatta. Varanasi: Chaukhambha Publishers; 2019.
- [10] Tewari PV. Ayurvediya Prasuti Tantra Evam Stri Roga. Vol. II. Varanasi: Chaukhambha Orientalia; 2019.
- [11] Dutta DC. Textbook of Obstetrics. 10th ed. New Delhi: Jaypee Brothers; 2022.
- [12] Shaw's Textbook of Gynecology. 18th ed. New Delhi: Elsevier; 2022.
- [13] Howkins J, Bourne G. Shaw's Textbook of Gynaecology. 17th ed. Elsevier; 2018.
- [14] Speroff L, Fritz MA. Clinical Gynecologic Endocrinology and Infertility. Philadelphia: Lippincott Williams & Wilkins; 2019.
- [15] World Health Organization. WHO laboratory manual for the examination and processing of human semen. 6th ed. Geneva: WHO; 2021.
- [16] American Society for Reproductive Medicine. Fertility evaluation of infertile women. Fertil Steril. 2021;116(5):1255-65.

- [17] National Institute for Health and Care Excellence. Fertility problems: assessment and treatment. NICE Guideline NG223. London; 2022.
- [18] Agnivesha. Charaka Samhita. Chikitsa Sthana. Varanasi: Chaukhambha Orientalia; 2020.
- [19] Sushruta. Sushruta Samhita. Chikitsa Sthana. Varanasi: Chaukhambha Orientalia; 2021.
- [20] Vagbhata. Ashtanga Hridaya. Siddhi Sthana. Varanasi: Chaukhambha Surbharati; 2022.
- [21] Tiwari PV. Ayurvediya Prasuti Tantra. Varanasi: Chaukhambha Vishvabharati; 2020.
- [22] Practice Committee of the American Society for Reproductive Medicine. Role of tubal surgery in infertility. Fertil Steril. 2021;115(5):1143-50.
- [23] Tripathi B. Charaka Samhita of Agnivesha. Varanasi: Chaukhambha Surbharati; 2021.
- [24] Sharma RK, Dash B. Charaka Samhita. English Translation. Varanasi: Chaukhambha Sanskrit Series Office; 2020.