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SUTIKA WELLBEING WSR TO INVOLUTION OF UTERUS- A PILOT STUDY

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ABSTRACT

Introduction- A *sutika* is prone for many conditions during the immediate and early phase of puerperium. Post-partum hemorrhage (PPH) is a frequent complication of delivery and its reported incidence in India is 2% – 4% after vaginal delivery and 6% after cesarean section with uterine atony being the most common cause (50%). **Aim-** To evaluate the effect of proprietary medicine in *sutika* wellbeing wsr to involution of uterus. **Objective-** To evaluate the effect of Ashotone tablet in uterine involution rate and abdominal circumference during early puerperium. **Materials And Method-** The drug was procured from SDL Private limited. 20 patients were registered for the study based on the inclusion criteria and were allocated randomly in two groups viz Group A trial group given with Ashotone tablet and Group B control group without any ayurvedic intervention. **Result-** The rate of involution of uterus was observed better in Group A. **Discussion-** Ashotone having the ingredients like *ashwagandha, haritaki, shatavari* are *rasayana* and *balya* drugs*; ashoka, lodhra, chandana* are *garbhashaya shodhaka; sariva, gokshura, pravala pishti, kaseesa bhasma* are *vata shamaka* and *balya* drugs. Most of the drugs are anti-oxidant, anti-inflammatory, hepatoprotective, neuroprotective, thus helping the systems to work efficiently and thus sutika regains her strength.

Keywords: Ayurveda, *Sutika* wellbeing, Ashotone, Involution

INTRODUCTION

During puerperal period there are a lot of changes going on in the female reproductive system in an effort to revert back to its pre-pregnant state. Process includes involution of uterus, changes in vagina, lochial discharge etc. The lady is prone for many

conditions during the immediate and early phase of puerperium. Post-partum hemorrhage (PPH) is a frequent complication of delivery and its reported incidence in India is 2% – 4% after vaginal delivery and 6% after cesarean section with uterine atony being the most common cause (50%) **[1]**. PPH is one of the major causes of maternal mortality around the world with a reported incidence of 2–11% **[2-4]**. According to WHO PPH Summit 2022, each year, about 14 million women experience PPH resulting in about 70,000 maternal deaths globally **[5]**. Also, the prevalence of primary and secondary PPH is approximately 6% and 1.86% of all deliveries, respectively **[6]**. About 1.30 million (95% CI 1.26-1.35 million) maternal deaths occurred between 1997 and 2020, with about 23,800 (95% CI 21 700-26,000) in 2020, with most occurring in poorer states (63%) and among women aged 20-29 years (58%). The leading causes of maternal death were obstetric haemorrhage (47%; higher in poorer states), pregnancy-related infection (12%) and hypertensive disorders of pregnancy (7%) **[7]**. Among the causes of PPH, uterine atonicity is the most common. So, working on to increase the tonicity of uterus in such cases, the condition can be prevented. Keeping all these in view, acharyas have mentioned in detail regarding the preventive aspects during puerperal period in *sutika paricharya* for regaining the strength and reverting back to the pre-pregnant state. *Paricharya* includes *ahara, vihara* and *aushadha* **[8-16]**. Hence a pilot study to evaluate the effect of ayurvedic formulation, Ashotone tablet in sutika wellbeing wsr to uterine involution in early puerperal period.

MATERIALS AND METHODS

Total of 20 patients were recruited and randomly allocated into two groups viz Group A trial group given with Ashotone tablet and Group B control group without any ayurvedic intervention. The parameters were noted at the same time every day.

INCLUSION CRITERIA

- Parturient women aged between 20-35 years
- Primi or Multipara (upto G2) with full term normal delivery (Beyond 37 weeks of gestation) who are willing to take part in the study and ready to sign informed written consent form.
- Women who delivered with or without episiotomy.

EXCLUSION CRITERIA

- Women delivered with the Lower segment caesarian section
- Parturient with history of Eclampsia or PPH.
- Patient with known case of Hyper/hypotension,

Hyper/hypoglycemia or any other chronic systemic disease.

- Women with Thyroid dysfunction during pregnancy
- Gestational diabetes mellitus, IUD, still birth, APH.
- Severe anemia (≤ 7 gm/dl)

POSOLOGY

- Dose: 1 tablet (580micro gm) thrice daily
- Duration: 15 days from 1st day of post-natal period
- Time of administration: before food with luke warm water

OBSERVATION

1. Involution of uterus

In group A, the mean rate of involution of uterus was found to be 2.1cm, 1.69cm, 1.41cm in 1st, 2nd and 3rd 24hrs post-delivery respectively, where as in group B it was found to be 1.75cm, 2.25cm and 1.25cm in 1st, 2nd and 3rd 24hrs post-delivery respectively **(Chart 1 and 2)**.

2. Abdominal girth

In group A, the mean rate of reduction in the abdominal girth was found to be 1.45 cm, 0.65 cm, 0.78 cm in 1st, 2nd and 3rd 24hrs post-delivery respectively, where as in group B it was found to be 1.44 cm, 1.4 cm and 0.73 cm in 1st, 2nd and 3rd 24hrs post-delivery respectively **(Chart 3 and 4)**.

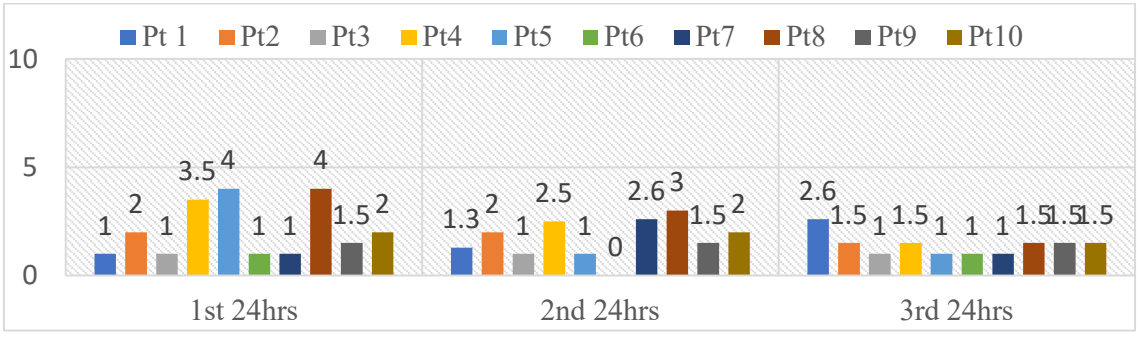

Chart 1: Decrease in the symphysis fundal height (SFH, in cm) in 1st, 2nd and 3rd 24 hrs post-delivery, in patients given with Ashotone tablet

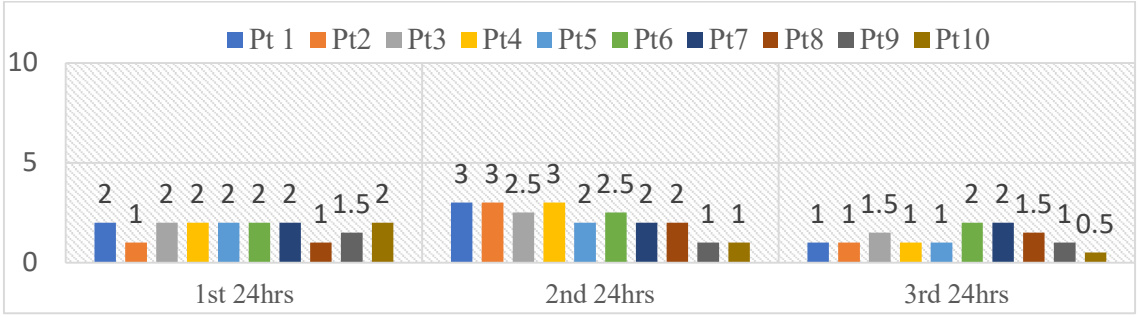

Chart 2: Decrease in the SFH (in cm) in 1st, 2nd and 3rd 24 hrs post-delivery, in control group

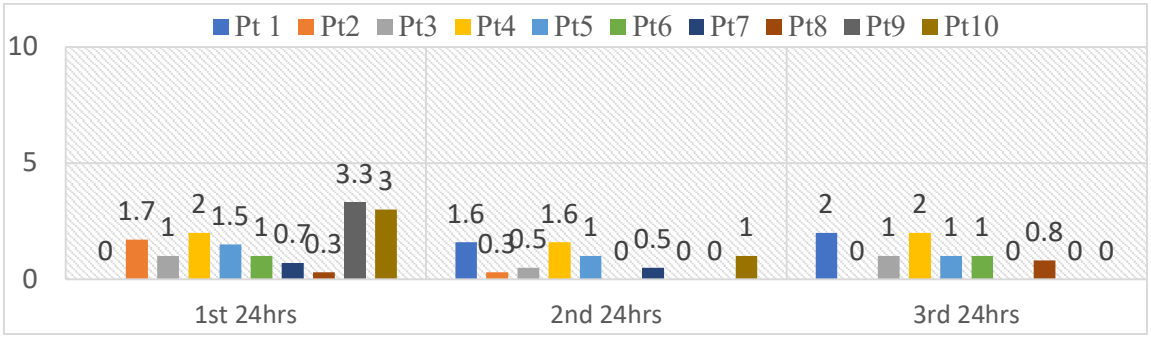

Chart 3: Decrease in the abdominal girth (in cm) 1st, 2nd and 3rd 24 hrs post-delivery, in patients given with Ashotone tablet

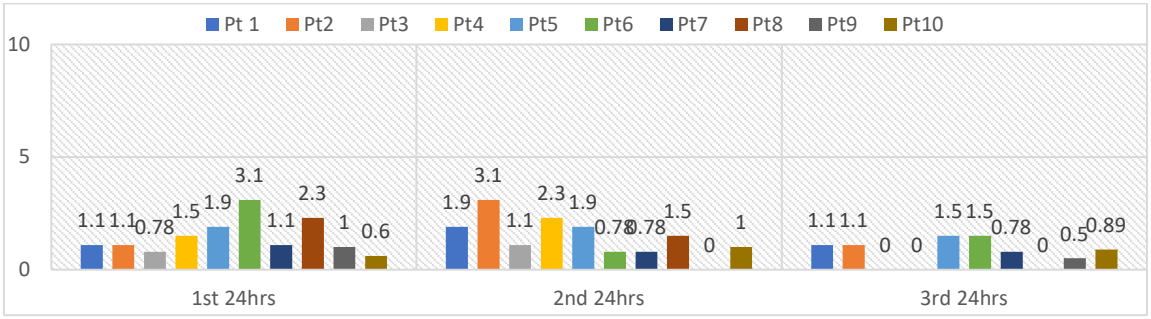

Chart 4: Decrease in the abdominal circumference (in cm) in 1st, 2nd and 3rd 24 hrs post-delivery, in control group

RESULT

Better rate of involution of uterus as well as reduction in the abdominal girth was observed in 1st and 3rd 24hrs post-delivery in Group A when compared to Group B. Although there is a scope for further study in larger population.

DISCUSSION

Involution of uterus is a process in which the muscles of uterus contract and retract. Criss-cross alignment of the muscle fibres constrict the blood vessels which checks the blood loss, hence is called as the living ligature arrangement. Therefore, the use of *balya* drugs, *rasayana* drugs and drugs with calcium composition to have proper contraction mechanism will be of help in the process. But as the *agnibala* of the *sutika* is reduced, even the *agni deepana* drugs need to be administered to help the food or the medicine to get properly digested and assimilated. Ingredients of Ashotone tablet include *Asoka* bark which exhibits uterine spasmodic effect through consistent oxytocic effect without producing the tonic contractions **[17]**. It has anti-proliferative effect hence reveals anti-estrogenic action **[18]**. *Lodhra* bark has analgesic, anti-inflammatory and anti-oxidant properties **[19]**. *Kulanjana* rhizome has *vatahara* property, carminative effect and stomachic **[20]**. *Pippali* has anti-inflammatory, anti-bacterial action and is *agni dipaka* **[21, 22]**. *Shatavari* has immunomodulatory, anti-hepatotoxic action and anti-oxidant effect, which checks the free radicals which

increase during the labour process **[23, 24]**. *Daruharidra* has anti-oxidant, hepatoprotective, antimicrobial action **[25]**. *Shweta sariva* has antimicrobial, anti-inflammatory and immunomodulating activities **[26]**. *Gokshura* has nephroprotective, hepatoprotective, anti-oxidant properties **[27]**. In *haritaki,* there are 14 tannins isolated from the fruit. Tannins have antimicrobial, anti-oxidant properties along with physiological effects like accelerating blood clotting, reducing the blood pressure, and modulate immune responses **[28]**. *Aswagandha* has anti-inflammatory, neuro-protective, hepato-protective and immunomodulating properties **[29]**. It is one of the main effects is anti-anxiety, which can be inferred by decrease in the serum cortisol levels and urinary catecholamine **[30]**. *Shweta Chandana* has anti-inflammatory, antiseptic, antipyretic, astringent properties and it also has effect on the mucus membranes of genitourinary tract helps remove mucous congestion, restore mucous membrane **[31]**. *Atmagupta* has anti-oxidant, anti-microbial and neuroprotective activity **[32]**. *Katuka* has rich source of hepatoprotective metabolites, Picroside-I and Picroside-II, hence pharmacological properties like hepatoprotective, antioxidant, antiallergic and antiasthamatic, anticancer activity particularly in liver and immunomodulatory **[33]**. *Kasisa bhasma* is used in iron-deficiency anaemia, has spleenoprotective action and alleviates *vata dosha* **[34, 35]**. *Praval pishthi* has cooling effect in the systems of body, by alleviating *pitta* mainly, reduces the burning sensations, arrests the bleeding in *raktapitta,* helpful in calcium deficiency and general debility **[36]**. As an antacid, it neutralizes gastric acid by acting as a buffer in the stomach's acidic environment also increases gastrointestinal motility and initiates peristalsis **[37]**. In HPTLC study of Ashotone tablet, the main chemical constituents found are diosgenin, lupeol and total polyphenols as gallic acid and ellagic acid **[38]**. Diosgenin has its effect on lipid system, reproductive system, immune system, inflammation, metabolic process and calcium regulation **[39, 40]**. It has also been found to have modulating effects on molecular targets and signalling pathways **[41]**. Lupeol has antioxidant, anti-inflammatory, anti-hyperglycaemic, anti-dyslipidemic and anti-mutagenic effects. From various animal model studies, it has been found to have cardioprotective, hepatoprotective, nephroprotective, neuroprotective and anticancer efficiency **[42, 43]**. Gallic acid is known for its anti-inflammatory property, it reduces the inflammatory response by reducing the release of cytokines, chemokines, adhesion molecule and cell infiltration **[44]**. Its properties like antihyperglycemic, antilipid

peroxidative, and antioxidant effects could be the probable mechanism of action responsible for cardioprotective activity **[45]**. Ellagic acid has a strong anti-oxidant property by regenerating the anti-oxidant cells **[46]**.

CONCLUSION

In classics the importance of the labour process has been highlighted as one leg of the lady is in this *loka* and other in *yama loka*[47]. That is to say the extent of disturbance in the body systems during that period. As most of the drugs in the medicine have anti-oxidant, anti-inflammatory, neuroprotective, hepatoprotective and immunomodulatory action, the medicine is beneficial in bringing the equilibrium in the systems leading to the wellbeing of *Sutika*. It takes care of the major systems required to function properly so that the *sutika* can regain her strength.

REFERENCES

[1] Kumar N. Postpartum hemorrhage; a major killer of woman: review of current scenario. *Obstet Gynecol Int J*. 2016;4(4):130-134.

[2] Anderson FWJ. Maternal mortality: an enduring epidemic. *Clinical Obstetrics and Gynecology*. 2009;52(2):214–223.

[3] Oyelese Y, Scorza WE, Mastrolia R, *et al*. Postpartum hemorrhage. *Obstetrics and Gynecology Clinics of North America*. 2007;34(3):421–441.

[4] Mercier FJ, Van de Velde M. Major obstetric hemorrhage. *Anesthesiol Clin*. 2008;26(1):53–66.

[5] https://www.who.int/publications/m/item/who-postpartum-haemorrhage-(pph)-summit

[6] Carroli G, Cuesta C, Abalos E, *et al*. Epidemiology of postpartum haemorrhage: a systematic review. Best Pract Res Clin Obstet Gynaecol. 2008;22(6):999–1012.

[7] Meh C, Sharma A, Ram U, *et al*. Trends in maternal mortality in India over two decades in nationally representative surveys. *BJOG*. 2022;129(4):550-561.

[8] Acharya Y T. In: Singh R H, editors. Charaka Samhita of Agnivesh with Ayurvedadipika commentary. Varanasi: Chaukhamba Surbharati Prakashan; 2021. Shareera sthana 8/48. p.349

[9] Tewari P.V. Ayurvediya Prasutitantra evum Streeroga. 2nd ed. Varanasi: Chaukhamba Orientalia, 2011; p. 547-548.

[10] Tewari P.V. Ayurvediya Prasutitantra evum Streeroga. 2nd ed. Varanasi: Chaukhamba Orientalia, 2011; p. 547-549.

[11] Tewari P.V. Editor. Kashyapa samhita (Vridhajeevakeey Tantra) of Kashyap. Varanasi: Chaukhambha Vishwabharati, 2013. Khilasthana 11/17-27. p. 577-579.

[12] Tewari P.V. Ayurvediya Prasutitantra evum Streeroga. 2nd ed. Varanasi: Chaukhamba Orientalia, 2011; p. 550.

[13] Tewari P.V. Editor. Kashyapa samhita (Vridhajeevakeey Tantra) of Kashyap. Varanasi: Chaukhambha Vishwabharati, 2013. Khilasthana 11/28-30. p.579.

[14] Tewari P.V. Ayurvediya Prasutitantra evum Streeroga. 2nd ed. Varanasi: Chaukhamba Orientalia, 2011; p. 547-548.

[15] Tewari P.V. Editor. Kashyapa samhita (Vridhajeevakeey Tantra) of Kashyap. Varanasi: Chaukhambha Vishwabharati, 2013. Khilasthana 11/33. p.580.

[16] Tewari P.V. Editor. Kashyapa samhita (Vridhajeevakeey Tantra) of Kashyap. Varanasi: Chaukhambha Vishwabharati, 2013. Khilasthana 11/32-33. p.579.

[17] Shastry JLN. Dravyaguna vijnana. Varanasi: Chaukhamba Orientalia, 2008; 194-195.

[18] Shahid AP, Salini S, Sasidharan N, Padikkala J, Raghavamenon AC, Babu TD. Effect of Saraca asoca (Asoka) on estradiol-induced keratinizing metaplasia in rat uterus. *J Basic Clin Physiol Pharmacol*. 2015;26(5):509-515.

[19] U Hemant. Pharmocological profile of Symplocos racemose: A Review. Science reuters.2014; 76-83.

[20] Shastry JLN. Dravyaguna vijnana. Varanasi: Chaukhamba Orientalia, 2008; 981-982.

[21] Shastry JLN. Dravyaguna vijnana. Varanasi: Chaukhamba Orientalia, 2008; 457.

[22] Yadav V, Krishnan A, Vohora D. A systematic review on Piper longum L.: Bridging traditional knowledge and pharmacological evidence for future translational research. *J Ethnopharmacol*.2020;247:112255.

[23] Goyal RK, Singh J, Lal H. Asparagus racemosus--an update. *Indian J Med Sci*. 2003;57(9):408-414.

[24] Groer ME, Jevitt C, Ji M. Immune changes and dysphoric moods across the postpartum. Am J Reprod Immunol. 2015;73(3):193-198.

[25] Choudhary S. *et al*. Daruharidra (Berberis aristata): Review based upon its Ayurvedic Properties. International Journal for Research in Applied Sciences and Biotechnology.2021;8(2):98-106.

[26] Shastry JLN. Dravyaguna vijnana. Varanasi: Chaukhamba Orientalia, 2008; 350-351.

[27] Chhatre S, Nesari T, Somani G, Kanchan D, Sathaye S. Phytopharmacological overview of

Tribulus terrestris. *Pharmacogn Rev*. 2014;8(15):45-51.

[28] Chung KT *et al*, Tannins and human health:a review. Crit Rev Food Sci Nutr. 1998;38(6):421-464.

[29] Mandlik Ingawale DS, Namdeo AG. Pharmacological evaluation of Ashwagandha highlighting its healthcare claims, safety, and toxicity aspects. *J Diet Suppl*. 2021;18(2):183-226.

[30] Shastry JLN. Dravyaguna vijnana. Varanasi: Chaukhamba Orientalia, 2008; 379-380.

[31] Kumar, Rakesh & Anjum, Nishat & TRIPATHI, YOGESH. (2015). Phytochemistry and Pharmacology of Santalum album L.: A Review. World Journal of Pharmaceutical Research. 4. 1842-1876.

[32] YADAV, MUKESH & Upadhyay, Prabhat & Purohit, Priyanka & Pandey, Bina & Shah, Harish. (2017). Phytochemistry and pharmacological activity of Mucuna pruriens: A review. International Journal of Green Pharmacy. 11. 69-73.

[33] Ganeshkumar Y, Ramarao A, Veeresham C. Picroside I and Picroside II from Tissue Cultures of *Picrorhiza kurroa*. *Pharmacognosy Res*. 2017;9(Suppl 1):S53-S56.

[34] Dole V, Paranjpe P. A textbook of Rasashastra. Delhi: Chaukhamba Sanskrit Pratishthan, 2006. P.231.

[35] Gilman, A.G., T.W. Rall, A.S. Nies and P. Taylor (eds.). Goodman and Gilman's The Pharmacological Basis of Therapeutics. 8th ed. New York, NY. Pergamon Press, 1990., p. 1290.

[36] Dole V, Paranjpe P. A textbook of Rasashastra. Delhi: Chaukhamba Sanskrit Pratishthan, 2006. P.347.

[37] Praval Pishti (Coral Calcium) Benefits & Side Effects - Ayur Times

[38] Microsoft Word - SDS for SHL prdts (solumiks.com)

[39] Shahrajabian, M.H., Sun, W., Marmitt, D.J. *et al*. Diosgenin and galactomannans, natural products in the pharmaceutical sciences. Clin Phytosci 7, 50 (2021).

[40] Jesus, Mafalda & Martins, Ana & Gallardo, Eugenia & Silvestre, Samuel. (2016). Diosgenin: Recent Highlights on Pharmacology and Analytical Methodology. Journal of Analytical Methods in Chemistry. 2016. 10.1155/2016/4156293.

[41] Parama D, Boruah M, Yachna K, *et al*. Diosgenin, a steroidal saponin, and its analogs: Effective therapies against different chronic diseases. Life Sci. 2020; 260: 118182.

[42] Tsai FS, Lin LW, Wu CR. Lupeol and Its Role in Chronic Diseases. Adv Exp Med Biol. 2016; 929: 145-175.

[43] Saleem M. Lupeol, a novel anti-inflammatory and anti-cancer dietary triterpene. Cancer Lett. 2009;285(2):109-115.

[44] Bai J, Zhang Y, Tang C, *et al*. Gallic acid: Pharmacological activities and molecular mechanisms involved in inflammation-related diseases. Biomed Pharmacother. 2021; 133: 110985.

[45] https://doi.org/10.1016/B978-0-12-398456-2.00080-3

[46] Taşcı, Bahtınur & Pashazadeh, Hojjat & Koca, Ilkay. (2019). Health Benefits of Ellagic Acid.

[47] Tewari PV. Kashyapa Samhita or Vriddhajivakiya Tantra.Varansi: Chaukhamba Bharati Academy, 2013. Sharirasthana 5/35-36. p.144-145.