

# Effective drug delivery systems in Gynaecology as Per Indian Medicinal Science – Ayurveda

## Abstract

Ayurveda is a traditional Indian system of Medicine. The concepts of Ayurveda have been expressed in the Texts two thousand years back. The drug delivery is predominantly considered through oral route, rectal route, urethral route, intrauterine or vaginal route, nasal route for internal medication purpose as parental route was not much developed in that period. Oral and rectal route is preferred for Gynaecological disorders for using the polyherbal formulations. Ayurveda described the rectal route therapy as most effective for preventive and therapeutics of gynaecological disorders. Considering pelvic area as seat of *Vata* which is major causative element in these diseases, rectal route proves very fast acting and effective route.

The procedure of administration of drugs by rectal route is nominated as '*Basti*'. It is compared with conventional enema due to its similarity in procedure. But in effect, enema is a simple evacuation technique whereas *Basti* is a therapeutic measure considered as half therapy in the various disease management. Ancient Ayurveda physicians has not only mentioned the specially designed instruments for this procedure but also explained the details of human and instrumental errors. Indications, contraindications and effects of improper dose administration of this drug delivery method are clearly mentioned.

This article reviews the literature study of rectal route administration of drugs, significance of drug delivery by rectal route, various references of enema therapy in gynaecological disorders.

**Keywords:** Ayurveda, *Basti*, Rectal route, Enema, Gynaecological disorders

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## Introduction

The term *basti/vasti* comes from usage of animal urinary bladder for administration of the formulation used. Fundamentally it differs from simple enema. *Basti* is one of the five most important therapies described in Ayurveda (Pancha-Five, Karma-Procedures) for cleansing purpose and management of diseases. It is classified in two varieties in broad manner.<sup>1</sup>

**Oil *Basti*:** (named as *Sneha/ Anuvasana*) - Oil, ghee, fat or bone marrow is used as per indication in this *basti*. It is given in the dose of 60ml to 150ml as per the age, sex, disease condition and season by physician.

This contains different oils as major part and base of the herbal formulation (Oleaginous substance). It is given by rectal route after taking food. It is retained in the body up to 12 hours approximately. Hence this route of administration is not exactly similar to enema procedure which helps in cleansing the body immediately after its administration.

**Decoction *Basti*:** (named as *Niruha*): Its dose varies as per patient. Minimum 450ml to 1000ml of decoction can be given. It is removed from the rectum within 1 hour after its administration. Defecation may or may not occur with its removal from body. If this *basti* is retained in the body for more than one hour then some medicated suppositories are used to remove it. This contain herbal decoction as the major part of formulation. This is given by rectal route on empty stomach.

These herbal formulations in the form of oil or decoction are given on alternate days during the treatment. The duration of treatment varies as per severity of the disease and physical and mental strength of the patient. Minimum duration prescribed is eight days and maximum can be for twenty one days.

Four actions are expected from *Basti* and divided as per the action.<sup>2</sup>

1. Detoxifying *basti* (~*Shodhana basti*)
2. Weight loss *basti*: Decreases fatty Sticky and atherosclerotic elements (~*Lekhana basti*)
3. Oleaginous *basti*: medicated oil or ghee is used
4. Body weight and other metabolic components improving *basti* (~*brihan basti*)

Concept of *basti* has been designed for the people travelling in ancient times on horse, camel or elephant for longer duration. It simply means the people who are sitting and travelling continuously are prone for different disorders like backache, cervical pain, indigestion, varicose veins, obesity etc.

The factor responsible for all movements in the body is called "*Vata*" in Classics. This *Vata* factor specially works in large intestine and pelvic area where reproductive tract is situated. It helps in defecation, urination, expulsion of foetus & placenta and menstruation like physiological events.

**Therapeutic effects:** Depending upon the drugs used for this procedure defines its action. It has two types of properties. It suppresses the symptoms by detoxifying the systemic toxins with enhanced immunity. Other effects are rejuvenation, physical and mental strengthening, stimulating defecation.

The enteric nervous system or the gut brain is an independent integrative system with structural and functional properties that are similar to those in CNS (Wood 1981).<sup>3</sup> Physiological and pharmacological properties of *Basti* procedure therapeutic effects are said to be outcome of modulation of Gut brain up to certain extent.

Ayurveda Classics have mentioned wide range and variety of *Basti* in Gynaecology.

**a. Basti in Gynaecology:** It can be helpful in treating menstrual disorders due to *Vata* disturbances e.g. some types of dysmenorrhoea, functional menorrhagia, etc., some infertility, etc. and some conditions like oligospermia in men. It has an immunomodulatory function. The quality of spermatozoa and ovum can be improved if *Basti* procedure is performed before conception with specific dietary regimen and limited period abstinence.

**b. Instruments for basti:** *Basti putak* (a bag to contain liquid),<sup>4</sup> and *Basti Yantra* (a tube attached to the bag full of medicated liquid).<sup>5</sup> Another option for these instruments is enema can or glycerine syringe with rubber catheter attached to the tip is also used. Rubber catheter avoids perforation or pain caused by cleansing enema. This procedure is done strictly under physician's supervision and such *basti* pouches are not freely available in the market.

**Errors of procedure:** Ancient texts of Ayurveda have clearly mentioned the human errors and instrumental errors precisely in the texts.<sup>6</sup>

**Measurement of instruments:** Length of the tube and size of the hole of the tube is mentioned in classics starting from 1 year of age till adult age.<sup>7</sup>

**Dose of the medicines used in decoction type:** Dose of the decoction *basti* is given from the age of 1 year to 70 years of age.

**Drugs used for the decoction:** Ancient physicians have mentioned the herbs as per taste (*Rasa*). The taste of herb generally describes the effect on *dosha* and the disease developed from aggravation or suppression of *dosha*.

## Discussion

The "*Basti*" procedure which is similar to enema is considered as half treatment in the management of the gynaecological diseases. Effects of this procedure are clinically well observed. The types of *basti* varies as per content, route of administration (e.g. Intrauterine route, urethral route, rectal route, sinus or fistula route), action of *basti* (e.g. Detoxifying/ liquefying/ fat reducing/ for weight gain and muscle tone improvement), number of *basti* (e.g. *Karma basti*- 30, *Kalbasti*- 16, *Yogbasti*-8), specifically designed *basti* (e.g. *Yapan Basti*, *Siddha basti*, etc.)

This standard operating procedure is written in details in Ayurveda Classics. There is lot of scope for research in this area in future.

## Conclusion

"*Basti*" procedure is different from enema and has different action potential as per the content and duration of treatment.

Adequate knowledge of the concepts of Ayurveda, diagnosis and designing the content of procedure definitely achieves the goal in the management of the disease in Gynaecology. Structural deformities cannot be treated with this procedure but there is significant value in functional disturbances.

There is no chance of perforation or increase in mortality as this procedure is carried out under supervision of doctors only. It is not freely available in the market though this is similar kind of procedure with enema when given by rectal route.

More number of herbs can be used in this method. (10-30 herbs are used at once). Retention of *basti* content is one of the cardinal features of this procedure which is not observed in cleansing enema. Only cleansing the rectum is not ultimate aim of this method of treatment.

## Conflict of interests

The authors declare that there is no conflict of interests.

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