



Review Article

GUDA VARTI FOR POST-OPERATIVE PAIN MANAGEMENT- ROAD LESS TRAVELLED

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ABSTRACT

Acute pain is an unpleasant sensory, emotional and mental sensation (experience) associated with vegetative signs, psychological response and changes in behavior. Post-operative pain is one such example and adequate management becomes utmost necessary. In Shalya tantra practice, proctology is the field of excellence for many practitioners and post-operative pain is an acquaintance difficult to handle. Many practitioners still resort to using contemporary I.M OR I.V analgesics for pain management which have proven ADR'S due to lack of availability of Ayurvedic analgesics for management. *Vartis* (suppositories) was in vogue since pre-historic times and have been mentioned in almost all Ayurvedic texts for various disorders with suitable formulations and various modes of insertion, e.g.: *Ratadi varti* for *Shoola*. Ayurveda also has a wide-range of drugs mentioned for relieving pain which have not been used to the full potential. Hence *Guda varti* as a drug delivery system for pain management needs to be explored in Ayurveda *Shalya tantra* practice.

KEYWORDS: *Guda varti*, Suppository, Post-operative pain.

INTRODUCTION

The goal for post-operative pain management is to reduce or eliminate pain and discomfort with minimum side effects^[1]. According to the 'American society of anesthesiologist practice guidelines for acute pain management in peri-operative setting', acute pain is defined as pain present in surgical patient because of pre-existing disease, the surgical procedure or a combination of disease related and procedure related sources.^[2]

The effective management of such pain becomes a hurdle for many Ayurvedic practitioners. In the field of *Shalya tantra* as proctology being the main field of excellence, the lack of available potent analgesics to relieve pain locally after surgery results in practitioners using contemporary I.M or I.V analgesics or diclofenac suppositories which have been proven to be highly Nephrotoxic^[3] and hepatotoxic^[4]. *Vartis* which have been in vogue since the pre-historic times needs to be explored as a better alternative to provide analgesia in Ayurveda.

***Vartis* and Suppositories**

Nirukti-Vartayateeti Vartih^[5]

Definition- *Vartiriva svarupatvata Vartih namna prakrititah*.^[6]

Medicines are powdered, triturated and given the *Varti* shape i.e., like the wick of a lamp and that is why it is called as *Varti Kalpana*. *Varti* resembles *Vati*

in all respects like preparation etc, but differs in shape and mode of administration. Eg: *Guda varti*-medicines are made into *Yavakriti*^[7].

Varti Kalpana has been mentioned in various texts like *Sharangdhara*, (14th AD) *Yogaratanakara* (16th AD) *Bhavaprakash* (16th AD) *Bhaishajya ratnavali* (20th AD) and many more.

Vartis are used for local administration through the following routes viz. *Guda* (Anus), *Yoni* (Vagina), *Sishna* (Penis), and *Netra* (Eye) and based on the route of drug administration, the length and diameter of the *Varti* will be modified.

Types of *Vartis*^[8]

- 1) Depending on size:** *Guda varti* (*Angushtha pramana*) (*Pusphanetrivat*), *Dhumavarti* (*Yavakara*) etc.
- 2) Depending upon the indication at particular site:** *Guda Varti*, *Yoni Varti*, *Vrana Varti*, *Sishna Varti*, *Dhuma Varti*, *Netra Varti*.
- 3) Depending on composition:** *Phala varti*-*madanaphala* as main ingredient
- 4) Depending upon the action:** *Soumya*- for *Snehana poshana* and *Roopana karma* and *Teekshana* for *Virechana* and *Lekhana karma*.

Guda varti (rectal suppositories)

Are inserted in the anal route and hence called *Guda Vartis*. They aid in *Vata (Apana vayu) Anulomana* and expulsion of *Mala*. They are indicated in *Udavarta, Adhmana* and *Shola*.

When used, the *Varti* is first soaked in *Ghritha* and then is inserted in the rectum slowly.

Eg: *Phala Varti*

General method of preparation [8]

Usually, two methods are employed here,

Paka method: Jaggery/sugar along with water boiled together over a mild fire until *Paka* of 2 to 3 thread consistency. Later the fine powder of medicinal drugs is added little by little and stirred well to attain a homogenous mixture and desired sized *Varti* are prepared.

Bhavana method: Fine powder of the medicinal drugs is mixed together and triturated along with the liquid media mentioned in the preparation. Later desired sized *Varti* are prepared.

Suppositories

The term suppositories have its origin in Latin and means, "to place under". Suppositories are a medicated solid dosage form intended for insertion into the body orifices. Suppositories and creams are the two main modes of administration of drugs through the rectum. They are used to deliver both systemically acting and locally-acting medications. The general principle is that the suppositories is inserted as a solid, and dissolve or melt inside the body to deliver the medicine pseudo received by the many blood vessels that follow the larger intestine. The suppository was first used in nursing facilities to be administered elderly patients who were not capable of taking medications. Suppositories come in various sizes and shapes which facilitate their insertion and retention in the cavity. Adult rectal suppositories weighed about 2gm while those for children are about half that weight.^[9]

Method of preparation [9]

- 1. Hand rolling:** It is the oldest and simplest method of suppository preparation and may be used when only a few suppositories are to be prepared in a cocoa butter base. A plastic-like mass is prepared by triturating grated cocoa butter and active ingredients in a mortar. The mass is formed into a ball in the palm of the hands, and then rolled into a uniform cylinder. The cylinder is then cut into the appropriate number of pieces which are rolled on one end to produce a conical shape.
- 2. Compression Molding:** It is a method of preparing suppositories from a mixture of grated

suppository base and medicaments which is forced into a special compression mold.

- 3. Fusion Molding:** It involves first melting the suppository base and then dispersing or dissolving the drug in the melted base. The mixture is removed from the heat and poured into a suppository mold. When the mixture has congealed the suppositories are removed from the mold. Since the components are measured by weight but compounded by volume density calculations and mold calibrations are required to provide accurate doses.

Physiology of rectal absorption

The veins of the rectum comprise the superior hemorrhoidal vein, which drains into the inferior mesenteric and portal system, and the middle and inferior hemorrhoidal veins, which enter the systemic venous circulation via the internal iliac veins. However, the inferior and middle hemorrhoidal veins bypass the liver and do not undergo first pass metabolism. Therefore, the drugs delivered through suppositories to the lower and middle hemorrhoidal veins are absorbed rapidly and effectively. The rectum is an interesting area for drug absorption because it is not buffered and has a neutral pH. It also has a very little enzymatic activity; thus, enzymatic degradation does not occur. The rectal mucus is more capable of tolerating various drug related irritations than the gastric mucosa.^[10]

Factors affecting the absorption

- Rectal gut-wall metabolism and metabolism by micro-organisms in the rectal lumen may decrease bioavailability.^[11]
- Biochemical composition of the drug inserted.

Advantages of Rectal Route Administration [11]

- No issues with oral abidance thus avoiding nausea and vomiting- Easily administered in unconscious patients.
- The achievement of a rapid systemic effect by giving a drug in a suitable solution (as an alternative to parental administration).
- Drug absorption may be easily discontinued in the event of an accidental overdose.
- The rate of drug absorption is not influenced by ingestion of food or the rate of gastric emptying
- First-pass elimination of high clearance drugs may be partly avoided.
- Contact with digestive fluids of the upper gastrointestinal tract is avoided, thereby preventing breakdown of some drugs.

Disadvantages of Rectal Route Administration [11]

- Interruption of absorption by defecation, which may occur particularly with irritant drugs.

- The surface area of the rectum is far smaller for absorption than that of the duodenum.
- The fluid contents of the rectum are much smaller than those of the duodenum and this may produce problems with dissolution of some drugs -patient acceptability may be a problem.

DISCUSSION

- Concept of *Vartis* has been widely discussed in the Ayurvedic treatises of *Charaka Samhita*, *Sushruta Samhita*, *Bhaishajya Kalpana*, *Sharangdhara* and many more which helps us understand the importance and efficacy of rectal route of administration of drugs.
- *Bhaishajya ratnavali* widely contributes different *Guda Vartis* in different diseases like *Udavarta*, *Atisara* and *Arshas*. *Chakradatta* also explains in detail about *Guda Vartis* for the treatment of *Shula*, *Arshas* and *Udavarta* showing the diversity of diseases in which it was being utilized.
- *Acharayyas* also give a detailed method of preparation and sizing of the *Vartis* for different routes of administration according to the disease intended to cure. Eg: *Pippalyadi guda varti*- used in *Udara vikara*, *Adhmana*.
- Contemporary science too has mentioned the importance of suppositories and developed formulations in close synchronization with the *Varti Kalpana*.
- The contemporary science works on post-operative pain by administration of analgesics and NSAIDS which is proven to be harmful and have varied recorded ADR'S.
- Ayurveda is the repository of drugs which are known to cure almost every illness and more, even so mentions different formulations of the same drugs to suit the patient without harming the efficacy of the drugs.
- Extensive research and study are further required to enhance the understanding about management of pain through *Varti* in Ayurveda.

CONCLUSION

Today, as there is increasing use of traditional medicine in proctology, there is a growing need to eliminate the myths about Ayurveda medicines not being efficient enough to curb post-operative pain. *Guda Varti* helps in *Apana Vayu Anulomana*, thereby helping reduce the pain as *Vata* is considered as the main culprit for inducing pain.

Varti administration represents a convenient, alternative route of drug administration. They are in an acceptable form, safe and easier for administration with a higher rate of bioavailability, and less wastage, can target delivery system with a lower dose and reduce systemic toxicity.

Keeping in mind all the factors aiding in the bio-availability of the drug efficacy and ease of administration more formulations can be converted into *Varti* to achieve the desired therapeutic effects.

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