

LAXATIVES AS PER MODERN SCIENCE CO-RELATED WITH AYURVEDIC SCIENCE

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ABSTRACT:

Wrong and Unhealthy eating habits are important factors accounting for the occurrence of Constipation. The standard definition of constipation is having fewer than three bowel habits per week. Normal Bowel function consists of the absorption of nutrients, electrolytes & water from the gut. Most nutrients are absorbed in small intestine, while the large bowel absorbs primarily water. There are several types of laxatives available, including stimulant, saline, osmotic etc. at this way there are so many different kinds of laxatives available, it is hard to know which one is the best one to use. So it is important to know about the effectiveness of each type. The information below is showing different types of laxatives.

KEYWORDS: Laxatives, Purgation, Stimulant, Bowel Habit, Duphalac, *Virechana*, *Bhedana*

INTRODUCTION

In day to day life regular bowel habit is considered as sign of good health. Constipation is root cause of many illnesses as per *Ayurveda*. *Ayurveda* lays emphasis on daily passing of stool regularly. Defecation is the process under the purview of *Apana Vayu* among the five types of Vata Dosha as per *Ayurveda*. Deranged function of *Apana Vayu* leads to various major illnesses. However the modern medical science does not mention a lot use of purgation. As per modern

medicine the definition of constipation is Infrequent or Difficult evacuation of feces or difficulty in emptying the bowels.

There are many causes of constipation as per modern medical science.

- **Material & Method**

This is a conceptual type of study. All sorts have been collected & relevant material is compiled from various available *Ayurvedic* classics text like *Charaka Samhita* etc as well as Modern classics like Davidson's Medicine, Satoskar's Pharmacology etc. Research articles are also searched from various web sites. All compiled matter is reorganized & critically analysed for the discussion and Attempt has been made to draw some fruitful conclusion.

- **Discussion**

Laxative procedure can be correlated with *Virechana* karma.

Definition of *Virechana*:³

īÉŠÉ SÉâwÉWûUhÉÇ AKÉÉâpÉÉaÉÇ ìúÉUâcÉÍÉ xÉÇ±MüqÉ |
EpÉrÉÇ uÉÉ zÉUÏUqÉsÉ ìúÉUâcÉÍÉÉiÉ ìúÉUâcÉÍÉ xÉÇ±É sÉpÉiÉâ || (Ch. Ka.
1/4)

The removal of Dosha through the '*Adho bhaga*' is symbolized as *Virechana*. It is one of the *Shodhana Karma* as mentioned in the *Ayurvedic* texture.

Classification depending upon intensity of action:

- 1) *Mridu Virechana*
- 2) *Madhyama Virechana*
- 3) *Tikshana Virechana*

Table No 1:

Classification depending upon intensity of action:

<i>Mridu</i>	<i>Madhyam</i>	<i>Tikshna</i>
<p>-Manda veerya drugs - given to <i>ruksha</i> patient. - Patient of <i>alpa Dosh</i>, <i>mridu koshta</i>, unknown <i>koshta</i>.</p>	<p>- Moderate potent drugs - Patient who is not properly <i>snigdha</i> & <i>swinna</i> - <i>Madhyam bala aatur</i>, <i>madhyam koshta</i>.</p>	<p>- Highly potent drugs - Patient who is properly <i>snigdha</i> & <i>swinna</i>. - <i>Pravara bala aatur</i>, <i>krura koshta</i>.</p>

• **Classification of Virechana:**

Sharangadhara has classified it as follows –

1) Anulomana: ⁴

The drug which forwards the *Mala* after their digestion and breaking their *Bandha* are known as *Anulomana* e.g. **Haritaki**.

M×üiuÉÉmÉÉMÇü qÉsÉÉÍÉÉÇ cÉ ÍpÉiuÉÉ
oÉÇKÉqÉKÉÉáIÉrÉáiÉÇ |
iÉŠÉÍÉÑsÉÉâqÉÍÉÇ ±ârÉÇ mÉëÉâ£üÉ WüUíiÉMüĐ ||

(Sha. Pu. 4/4)

Here, *bandha* means *bandha* of *Vayu*. *Sushruta* has given synonyms of *Anuloman* is *Sara*, and *Dalhana* adds that *Anulomana* causes expulsion of *Vata* and *Kapha*. *Bhavamishra* has considered undigested *doshas* as *Mala rupa* and said that drugs which expel them are *Anulomana*. From practical view point the meaning ‘removal of *bandhana of Vayu*’ fits more appropriately to *Anulomana* karma.

2) *Sramsana*:⁵

The drug which expels half digested and sticky *Mala* without its prior digestion is known as *Sramsana*, e.g. *Aragavadha*.

मÉ£üiÉurÉÇ rÉSèMÉYiuÉæuÉ ÎzsÉ¹Ç MüÉå,å
qÉsÉÉÌSMüqÉÇ |
IÉrÉirÉkÉ: xÉÇxÉèIÉÇ iÉSè rÉjÉÉ xrÉÉiÉÇ
M×üiÉqÉÉsÉMüqÉÇ || (Sha. Pu. 4/5)

Bhavaprakasha opines that ‘*Adi*’ of word *Maladi* denotes *Kapha* and *Pitta*, hence the field of *Sramsana* widens.

The difference between *Anulomana* and *Sramsana* is the absence of Digestion of *Mala* in *Sramsana* indicating it’s a bit stronger property.

3) *Bhedana*:⁶

The drug which disintegrates the *Abaddha* (unformed) or *Baddha* (well formed) or *Pindita* (dried faecal mass) *Pindita mala* and directs it outside the body through lower gut is known as *Bhedana*. e.g. *Katuki*.

qÉsÉÉÌSMüqÉoÉÉÇ rÉiÉÇ oÉÉÇ uÉÉ ÌmÉÎhQûiÉÇ
qÉsÉæ :|
ÍpÉiuÉÉ AKÉ: mÉÉiÉrÉliÉ pÉåSIÉÇ MüOÒùMüÐ rÉjÉÉ ||
(Sha. Pu. 4/6)

Here, the drug potency is more and it is able to expel even the hard, *Pindita* stool.

4) *Rechana*:⁷

The drug, which eliminates digested as well as undigested *Mala* or *Dosha* by making them watery through anal route are known as *Rechana* e.g. *Trivrutta*.

ÛémÉYuÉÇ rÉSmÉYuÉÇ uÉÉ qÉsÉÉÌS SiuÉiÉÉÇ IÉrÉáiÉ |
UácÉrÉirÉÌmÉ iÉe±árÉÇ UácÉIÉÇ Ì§ÉuÉ×ÉÉ rÉjÉÉ || (Sha. Pu.4/7)

Here Adhamalla adds that this class of drugs not only eliminates the Digested or indigested *Mala* in watery form but it also does this very quickly (*rechayati*).

Agraya Dravya in Context of Virechana:

For Mridu Virechana - **Aragavadha**

For Tikshna Virechana - **Snuhi**

For Sukha Virechana - **Trivritta**

For Bhedana and Anulomana - **Amlavetasa**

(Ch. Su. 25/40)

- **Modern View**

Definition – Drugs which are used to promote defecation are called “Laxatives”.

- In large doses many laxatives promote catharsis which means “Purgation”.
- **Normal Physiology of Defecation :**

Intestinal movements are of 3 types.

- 1) **Pendular** - due to annular contraction of longitudinal muscles.
- 2) **Segmental** – due to contraction of circular muscles.
- 3) **Peristaltic** – the 1st two are responsible for mixing of food while peristalsis helps in propulsion.

The peristaltic waves occur frequently up to ileum while they are very irregular in case of transverse, descending and pelvic colon.

Normally most of the ingested water and fluids secreted by various gastrointestinal glands are reabsorbed and only about 100 ml of fluid is excreted with the faecal matter. Greater the indigestible residue and water content, more rapidly it reaches the rectum and produces its distension.

Diminished intake of both water and indigestible residue can lead to constipation.

- **Classification of Laxative.**

A} According to Intensity of Action –

- 1) Stimulant/ Irritant - a) Anthraquinone b) Irritant c) Miscellaneous.
- 2) Osmotic Laxative
- 3) Bulk Laxative
- 4) Emollient Laxative
- 5) Chlorine Channel Activator

6) Prokinetic Agent.

B} According to onset of Laxative –

1) **Slow onset** - which soften stool after 1 to 3 days use.

e.g. – Bulk laxative, Mineral Oil, Lactulose, Dioctyl Sodium Sulfosuccinate.

2) **Intermediate Onset** – Which cause soft semisolid stool in 6 to 12 hr.

e.g. – Saline Laxative, Bisacodyl, Anthraquinone group

3) **Rapid Onset** – Which produce watery evacuation in 2 to 6 hrs.

e.g.- Saliine laxative, Castor oil , Bisacodyl, Glycerin suppository.

Stimulant \ Irritant Laxative

A) Anthraquinone group –

Commonly used agents are Cascara sagrada and Senna. The active constituents present as inactive precursor glycoside in the leaves. Anthraquinone are liberated in small intestine. Evacuation of stool occurs 6-8 hrs after their ingestion. They are excreted in milk during lactation and this may produce diarrhea in breast fed infants. The dried senna seeds obtained from the plants *Cassia acutifolia* and *Casia angustifolia* resp.

B) Irritant Oils –

e.g. – Castor oil

it is a fixed oil obtained from the seeds of *Ricinus communis*. It is triglyceride of ricinoleic acid, unsaturated fatty acid. Acts on small intestine.

C) Miscellaneous –

1) **Phenolphthalein** – present in cheap wines. Act as a stimulant mainly on large bowel after 6-8 hrs. Produces soft, semiliquid stools with mild griping.

2) **Bisacodyl (Dulcolax)** – used as orally and as rectal suppository.

Rapidly converted by intestinal enzymes and bacteria to active desactyl metabolite.

3) **Sodium Picosulphate (Cremalax)** - acts on large bowel and results in soft stool in 10 - 14 hrs.

Osmatic Laxative.

e.g. – Magnesium sulphate, Milk of magnesia, Magnesium citrate, Potassium sodium tartrate, Lactulose, Polyethylene glycol.

This acts as a mechanical stimulus causing an increase in the intestinal motor activity and evacuation. Acts in small and large intestine. Produce watery evacuation within 3 to 6 hrs. they have a quick onset of action and hence given in early in morning.

▪ **Lactulose –**

It is a syntestic non absorbable disaccharide. It is converted to lactic acid which can bind ammonia.

▪ **Glycerin –**

It is used in the form of rectal suppository. It softens stool and lubricate the dried up feces.

Also stimulate rectal contraction.

❖ **Bulk Laxatives –**

e.g. – methyl cellulose, agar, Plantago seeds, Bran.

These are semi synthetic polysaccharides and cellulose derivative.

1) Agar

Mucilaginous substance extracted from marine algae. Contains indigestible hemicelluloses with water. It forms a gel which has emollient or lubricating properties.

2) Isapgol

Dried seeds of Plantago ovata. Contains natural mucilage.

3) Sabza

Dried seeds of Ocimum basilicum . Rich in mucilage.

4) Bran

Byproduct of milling of wheat and contains almost 40 % fibre.

▪ **Bulk forming laxatives used in patients with**

- Irritable bowel syndrome – Haemorrhoids and anal fissures –Chronic diarrhea
- Colostomy of ileostomy.

❖ **Emollient Laxatives**

e.g. – Liquide paraffin, Dioctyl sodium sulfosuccinate.

▪ **Liquid Paraffin –** consist of mixture of hydrocarbons obtained from petroleum.

Exerts a softening and lubricating effect on faeces. Straining during defecations can be avoided. Should not used in children under 3 yrs.

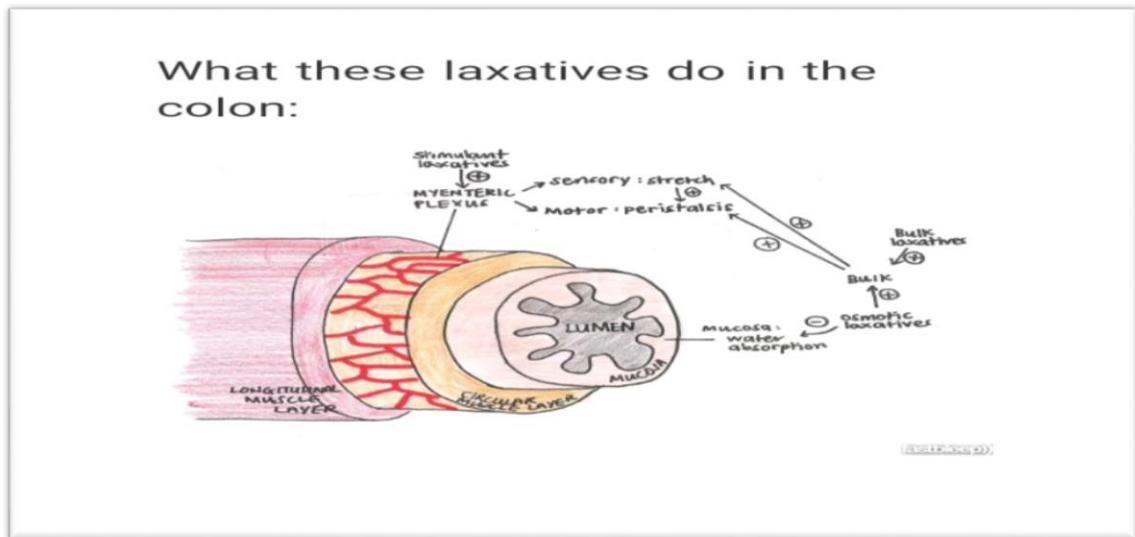
❖ **Prokinetic / 5 HT4 receptor agonists**

Prokinetic drug acts as a 5 HT4 agonist in the entire GI Tract and was used in patients with predominant constipation.

❖ **Chloride channel activators.**

e.g. – Lubiprostone , Linaclotide

Drug acts locally in GIT by opening chloride channels, resulting in secretion of chloride rich intestinal fluid. This accelerates small intestinal and colonic transit.



Pharmacodynamics of Ayurvedic drug with Co-relation to Virechana:

(Laxative/Purgative)

- 1) *Haritaki*⁴ contains – Chebulin, Ellagic acid, Chebulinic acid, Gallic acid, Ethyl gallate, Punicalagin, Tannic acid.
In that, Chebulin, Chebulic acid increases intestinal motility and at that way Haritaki act as a Laxative.
- 2) *Aaragvadha*⁵ contains – Fistulin, Bianthoquinone glucoside, Lupeol, Beta – sitosterol.
In that Fistulin increases intestinal motility and acts as a laxative.
- 3) *Kutki*⁶ contains – Kutkin, C – 9 iridoid glycosides like Picroside & Kutakoside.

In that, Kutkin disintegrates unformed or well formed or dried faecal mass and directs it outside the body through lower gut. In this way it act as laxative.

- 4) *Trivrutta*⁷ contains – Turoethin, 10% Glycosidium resin. In that Turoethin improves peristaltic movements and act as Mild Laxative.

- 5) *Erand* contains – Ricinoleic acid (85-95%), Oleic acid, Linoeic acid, Stearic acid, Palmitic acid. In that Ricinoleic acid increases intestinal motility and act as Irritant laxative.
After oral ingestion of castor oil, ricinoleic acid is released by lipases in the intestinal lumen & considerable amounts of ricinoleic acid are absorbed in the intestine. And act as Irritant laxative.

- 6) *Snuhi* contains – Euphol, Antiquorin, Nerifoliene. Euphol increases inteatinal motility and act as Strong Laxative.

Conclusion:

From above it is clear that, those drugs mentioned in Ayurveda for Virechana posses the same property of Laxative as well as purgative action. Hence we can safely suggest the above mentioned drugs for the same purpose as it is chemical free and posses lesser threat to the body from its ill effects. Since the stream of Ayurveda is ancient, data collection regarding various Ayurvedic drugs is still limited so for better understanding various research are still necessary to be carried out and explore the fruitful ocean of Ayurveda.

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