A REVIEW ON PHARMACODYNAMICS OF VIRECHANAKARMA AND VIRECHANOPAGA DASHEMANI

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ABSTRACT
Samshodhana Chikitsa (Panchakarma Therapy) is the radical treatment of a disease and is supposed to eradicate or eliminate the vitiated Doshas from the body thus completely preventing or curing the disease. Virechana is the best process for purifying of vitiated Pitta Dosha and also beneficial for Kapha associate Pitta, Pitta Sthana-gata Kapha. Physiological and biochemical effects of a Virechaka Dravya on the body and the body’s response to the Virechaka Dravya results in Virechana karma. Pharmacodynamics of Virechano-paga Dravyas is not clear yet. So it is necessary to establish mode of action of Virechana and Virechanopaga Dravya for the betterment. This article is an effort to make a concept regarding mechanism of Virechana Karma and pharmacodynamics of Virechanopaga Dashemani of Charaka Samhita.

KEYWORDS: Virechana Karma, Mechanism, Virechanopaga Dashemani, Pharmacodynamics.

INTRODUCTION
Virechana (Purgation therapy) is the second most therapy in the sequence of Panchakarma. It is most widely used purification procedure especially for Paittika disease (diseases due to vitiation of Pitta) because of its simplicity, eliminating the Doshas in more quantity, with less stress and having lesser complication compared to Vamana Karma. It is also useful in the disorders of Pitta associated with Vata or Kapha.¹

The forcible expulsion of vitiated Pitta or Kapha associated pitta through the anal route is called Virechana.² After Snehana (oleation) and Swedana (sudation) Karma the process is followed by induction of Virechana by Virechana Kalpas (medicine for Virechana), as described in ‘Apmargatanduliya Adhyayah³ and in ‘Kalpa Sthana’⁴. The patient is advised to Samsarjana Krama (specific dietary regimen) to reach up to normal diet and to complete the therapy. The whole procedure including Snehana, Swedana and Samsarjana Krama is called Virechana Karma.⁵ Virechana means to expel out Doshas through Adhobhaga (anal route),⁶ by this route
the Doshas can be eliminated by means of Niruha Basti also but Niruha Basti has no power of Adhobhagaharana. Therefore, Niruha Basti cannot be included under Virechana karma. Virechana expels out the Amashayadi Doshas dragging them towards the Adhobhaga through the anus. Similarly the Niruha Basti removes the Doshas from Pakwashaya. Another point of differentiation between Virechana karma and Niruha Basti is that the Virechana is a specific treatment for Pitta Dosha while Basti is recommended for treating Vata-Dosha.

Virechana aims at the elimination of Doshas, which cannot be removed by Vamana or through kidney, stomach, lungs or sweat glands. This process is meant for elimination of Doshas through Purisha-Dhara Kala (lower intestine) and Yakrita(liver).

Nirukti

Virechana word is made by combination of main ‘Rich’ dhatu and ‘Vi’ Upsarga and ‘Nich’ Lyut Pratyayas giving meaning ‘Visheshena Rechayateeti’. Rechana is derived from root word ‘Ricir Dhatu and Lyut Pratyaya’ (Mala Bhedana).

Acharya Charaka has mentioned Virechana word for both Vamana and Virechana in Kalp Sthana. So the word Rechana is commonly used for evacuation of Doshas, which is done by both Vamana and Virechana. But in general, the word Virechana denoted evacuation of Dosha through anus.

The mode of action of Virechana Dravyas (Purgatives)–

Acharya Charaka has described a very unique and conceptual mechanism of Vamana and Virecana Karma. The mechanism of Vamana as well as Virechana is almost the same because they have more or less the same properties. The difference between both mechanisms is in the Pancha-Mahābhaūtik composition of Kalpas (medicine) thereby eliminating route.

Properties of Virechana Dravyas

1 Guna: Virechana Dravyas have all the properties of Vamana Dravya i.e. Ushna, Tikshana, Sukshma, Vyavayi and Vikasi.

2 Panchabhautika Sanghathana: These drugs consist of Prithvi and Jala Mahabhutas. Virechana drugs have a specific property of removing the Doshas from the lower part of the body (Adhobhaga).

3 Virya: Virechana drugs possess an inherent Virya.

4 Prabhava: Inherent Prabhava on virtue of which, they can induce Virechana.

The main action of Virechana Dravyas is on Adhobhaga of the individual. The vitiated Pitta Dosha present in entire body is alleviated and expelled out through the mechanism of Virechana and the disease process is arrested. The Virechana Dravya spreads throughout the body of
cellular level due to its pharmacological properties.

1. Vyavayi\textsuperscript{13} Guna of Virechana Dravya is responsible for quick absorption, while Vikasi\textsuperscript{14} Guna causes softening and loosening of the bond by Dhatu Saithilya Karma\textsuperscript{15}.

2. Due to Ushna Guna, the Dosha Sanghata (compeactness) is liquefied (Vishyandana)\textsuperscript{16}.

3. Tikshna properties of Virechana drugs produce Chedana of the Doshas, which are already softened due to oleation therapy or able to disintegrate the Sanghata of the Doshas. According to Dalhana this action is due to quick excretion (Dosha Sravana-Karatvam)\textsuperscript{15}. Thus, liquefied Doshas are dragged towards the Koshtha.

4. Due to Sukshma\textsuperscript{17} property by reaching in micro channels, disintegrates endogenic toxins, which are then excreted through micro channels.

5. Due to dominance of Prithivi and Jala Mahabhutas in the Virechana drugs and their potent Adhobhaga Hara Prabhava, the vitiated Doshas are made to pass through anal route and are expelled out of the body.

6. The Vanaka and Virechaka Dravya induce emesis and purgation respectively due to their specific Prabhava.

7. For example, Danti (Baliospermum montanum Muell.-Arg.) and Chitraka (Plumbago zeylanica Linn.) both have same rasa and Virya, but Danti on administration internally produces Virechana Karam, but Chitraka does not produce Virechana. This is called selective action of the drug i.e. Prabhava.\textsuperscript{18} When there is similarity in two drugs in relation to their taste (Rasa) and potency (Vipaka and Virya), their pharmacological actions may be different due to Prabhava of these drugs.

Virechana drug possessing the above properties reaches the Hridaya by virtue of its Virya and then following the Dhamani. It pervades the whole body through large and small Srotas. On virtue of its Agney properties, it causes Vishyandana i.e. oozing of the Doshas and by its Tikshana Guna, it is able to disintegrate the accumulated Dosha. Due to Snehana, Dosha smear easily without any hurdle and easily come to Amashaya from where Virechana evacuates them.

Here the word Hridaya can be understood in two ways. Firstly, as center of local nerve plexus upon which the drug may act i.e. Ghreya Yoga\textsuperscript{19} in which Virechana Dravyas are administered by nasal route. It is possible that such medicine has some effect over brain or local plexus of abdomen through which it causes Virechana. On the other hand, Hridaya can be taken for circulation i.e. Drug like phenolphthalein\textsuperscript{20} used for purgation, is partly absorbed after which it enter in circulation and then comes in intestine exerting its purgative effect.

\textit{Virechanopaga Dashemani} (Table no. 1)
There are certain drugs, which helps in proper Virechana or which will synergic action of Virechana Dravya is known as Virechanopaga.\textsuperscript{21}

### Table no. 1. Virechanopaga Dashemani

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Drugs</th>
<th>Latin Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Draksha</td>
<td>Vitisvinifera Linn.</td>
</tr>
<tr>
<td>2</td>
<td>Gambhari</td>
<td>Gmelinaarborea Linn.</td>
</tr>
<tr>
<td>3</td>
<td>Parushaka</td>
<td>Grewia asiatica Linn.</td>
</tr>
<tr>
<td>4</td>
<td>Abhaya</td>
<td>Terminaliachebula Retz.</td>
</tr>
<tr>
<td>5</td>
<td>Amalaki</td>
<td>Emblica officinarum Linn.</td>
</tr>
<tr>
<td>6</td>
<td>Vibhitaki</td>
<td>Terminaliabellirica Roxb.</td>
</tr>
<tr>
<td>7</td>
<td>Kuval</td>
<td>Zizyphus sp.</td>
</tr>
<tr>
<td>8</td>
<td>Badar</td>
<td>Ziziphusmauritiana Lam.</td>
</tr>
<tr>
<td>9</td>
<td>Karkandhu</td>
<td>Ziziphusnummularia (Burm.f.) W.&amp;A.</td>
</tr>
<tr>
<td>10</td>
<td>Pilu</td>
<td>Salvadorapersica Linn.</td>
</tr>
</tbody>
</table>

**Pharmacodynamic of Virechanopaga Dravyas:**

The overall pharmacodynamic of Virechanopaga Dasemani drugs is based on Guna concept. Most of the drugs (70%) are having property of Madhura Rasa and Snigdha Guna. These are based on Prithavi and Jala Mahabhauta (one of the five elements of the universe) in composition. Acharya Charaka has mentioned only the role of Gunas in the pharmacodynamic of Virechana Karma. In fact Guna is the thing which represents a drug. So, the selection of a drug should be on the basis of Gunas for Virechana karma. (Table no. 2, 3) Acharya Charaka has mentioned predominance of Prithavi and Jala mahabhuta drugs for Virechana Karma. Rasas (taste) of Virechano-paga Dravyas are chiefly Madhura (sweet), Kashaya (Astringent) and Amla (sour) Rasa which are composition of the same Mahabhutas. Most of drugs are Madhura Vipaka having similar Bhautic constitution. Other drugs are supportive to the therapy or to avoid complications during Virechna Karma.

As an example; Draksha which is mentioned in Virechano-paga Dashemaniis used with Virechana drugs for increasing the palatability and giving soothing effect. Draksha is said to be Srista-virna Mutra (increases amount of excreta), and due to Snigdha, Sheeta, Madhura Guna (properties), it may be used in complications of Virechana like thirst, burning sensation, fever, bleeding disorders.\textsuperscript{22} So with the addition of Draksha, in Virechana Karma the procedure becomes comfortable and smooth.
In common practice decoction of Triphala (combination of *Termannalia chebula* Retz, *Emblica officinarum* Linn., *Terminalia bellirica* Roxb.) is used as Anupana of Virechana Yoga like Trivruta (*Operculina turpethum* Linn.), Danti Yogas etc. for induction of better Vega in Virechana Karma. As per the Ayurvedic pharmacology it is a good Pitta-kapha-hrit, Sara, safe in nature so helps in Virechana Karma for eliminating the Dosha through anal route. That’s why Triphala does not only increase the potency of Virechana Dravyas but also soothing effect of the irritation and decreases the complications of Virechana procedure.

**Physiology of Virechana** (The defecation reflex)

Mass peristaltic movements push fecal material from the sigmoid colon into the rectum. The resulting distension of the rectal wall stimulates stretch receptors, which initiates a defecation reflex that empties the rectum. The defecation reflex occurs as follows: In response to distension of the rectal wall, the receptors send sensory nerve impulses to the sacral spinal cord. Motor impulses from the cord travel along parasympathetic nerves back to the descending colon, sigmoid colon, rectum and anus. The resulting contraction of the longitudinal rectal muscles shortens the rectum, thereby increasing the pressure within it. This pressure, along with voluntary contractions of the diaphragm and abdominal muscles, plus parasympathetic stimulation, opens the internal anal sphincter and defecation occurs and the feces are expelled through the anus.

**Mechanism of Virechana** (Purgation)

All purgatives increase the water content of faeces by:

A) **Hydropphilic or osmotic action**, retaining water and electrolytes in the intestinal lumen – increase volume of colonic content and make it easily propelled.

B) **Acting on intestinal mucosa**, decrease net absorption of water and electrolyte; intestinal transit is enhanced indirectly by the fluid bulk.

C) **Increase propulsive activity as primary action**, allowing less time for absorption of salt and water as a secondary effect.

For some of the drugs, controversy continues as to whether they increase water content of stools as the primary action or it is a consequence of increased motility. However, certain purgatives do increase motility through an action on the myentric plexuses. Laxatives modify the fluid dynamics of the mucosal cell and may cause fluid accumulation in gut lumen by one or more of following mechanism:

a) **Inhibiting Na⁺K⁺ATPase of cells** – Impairing electrolyte and water absorption.
b) **Stimulating adenyly cyclase in crypt cell** – Increasing water and electrolyte secretion.

c) **Enhancing PG synthesis in mucosa** which increase secretion.

d) **Structural injury to the absorbing intestinal mucosal cells.**

### Table no. 2 Predominance of *Rasa* in *Virechanopaga Dasemani*

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Rasa</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Madhura</td>
<td>70%</td>
</tr>
<tr>
<td>2</td>
<td>Amla</td>
<td>10%</td>
</tr>
<tr>
<td>3</td>
<td>Kashaya</td>
<td>20%</td>
</tr>
</tbody>
</table>

### Table no. 3 Predominance of *Guna* in *Virechanopaga Dasemani*

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Guna</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Snigdha</td>
<td>70%</td>
</tr>
<tr>
<td>2</td>
<td>Ruksha</td>
<td>30%</td>
</tr>
<tr>
<td>3</td>
<td>Guru</td>
<td>50%</td>
</tr>
<tr>
<td>4</td>
<td>Laghu</td>
<td>50%</td>
</tr>
</tbody>
</table>

**CONCLUSION**

*Virechana* drugs act on the basis of *Usna, Tikshna, Sukshma, Vyavai, Vikasi Gunas* and *Panchabhautik* composition. *Dravyas of Virechanopaga Dasemani* support the whole procedure. Their action differs from drug to drug. Most of the *virechanopaga* drugs are used for laxation in *Mridu-Koshathi* and usable part for *Virechana Karma* is their fruit. First three drugs i.e. *Draksha, Gambhari, Parushaka* have *Snigdha, Guru, Pitta-Shamaka* properties so that they can be used both as laxatives and pacifying complications of *Virchana Karma*. Second three drugs i.e. *Abhya, Amlaka, Vibhitaka (Triphala)* are used as laxatives and due to *Madhura Vipaka*, they are not harmful to *Dhatu* (body elements). Three types of *Badara and Pilu* have *Snigdha* and *Bhedana* (purgative) properties so they not only maintain mucosa of intestine but also passes stool smoothly.

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