

PHARMACOKINETICS OF VIRECHANA KARMA: A SHORT REVIEW

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ABSTRACT :

Ayurved is Science of life. Primary aim of Ayurveda is maintain health of healthy person. Now a days *panchkarma* therapy getting popularity in society. Main reasons of popularity of *panchkarma* is instant and prolong relief. *Virechana* is one of the most useful *panchkarma* therapy.in opd to ipd all level its give magical result. It is my experience that many cases of *kushta* and nervous system get dynamic result due to *Virechana*.so it is important to understand its mechanism. How body act on drug can describe in Pharmacokinetics. *Virechana* drugs have *Ushna*, *Tikshna*, *Sukshma*, *Vyavayi*, *Vikasi* and *Adhobhagahar prabhav* properties. With own *virya* & *prabhav*& property *Virechana* drugs reach to the heart (hridaya).from hridaya its enter in suksham stratus and liquefied all Dosha (*vishyandana*) the *doshasamghata* by virtue of their *Ushnaguna* and flaccid it.After that its break up (*chedana*) by their *Tikshna* and *Vikasiguna*. The vitiated *Pitta-dosha* is expelled out through mechanism of *VirechanaKarma*. In this review article describe all topic related Pharmacokinetics of *Virechana karma*.

Keywords : *Virechana Karma*,Purgation Therapy, Pharmacokinetics

INTRODUCTION: *Virechan karma* (Drug induced purgation therapy):

Virechana is medicated purgation therapy, it is the cleansing of the *PittaDosha*¹ and the purification of the blood toxins from the body that are accumulated in the liver and gallbladder.it completely cleanses the gastro intestinal tract through anus.

Pharmacokinetics

- How the body affects a specific drug after administration and what happens to the drug while in the body. This involves the body systems for handling the drug.²
- Pharmacokinetics is the Absorption, the Distribution, the Metabolism (biotransformation) and the Elimination of drugs in body.³
- Absorption and distribution indicate the passage of the drug molecules from the administration site to the blood and the passage of drug molecules from blood to tissues respectively.
- Drug elimination may occur through biotransformation and by the passage of molecules from the blood to the outside of the body through urines, bile or other routes.

Mode of action according to the Properties:

The main action of *Virechana Dravyas* is on *Adhobhaga* of the individual. The vitiated *Pitta Doshas* present in the entire body are alleviated and expelled out through the mechanism of *Virechana* and the disease process is arrested. The *Virechana* drug spreads throughout the body of cellular level due to its Pharmacological properties.⁴

• The *Ushna* property may help in increasing the quantum of *Agni*. It causes *Vishyandana* i.e oozing of *Doshas* in the *Koshta*.

• *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 *Doshas*. Thus liquefied *Doshas* are dragged towards *Koshta*.

• *Vyavayi* property of *Virechana* drugs is able to spread in the whole body prior to its digestion, while *Vikasi Guna* is able to scorch various *Dhatus* and can compel the *Doshas* residing in it to come out.

- Due to dominance of *Prithivi* and *Jal Mahabhutas* in the *Virechana* drugs and their potent *Adhobhagahara Prabhava*, the vitiated *Doshas* are made to pass through anal route (*Guda*) and are expelled out of the body.⁵

- The *Vamaka* and *Virechak* drugs induce emesis and purgation mechanism respectively due to their *dravya - Guna*, *Karma*⁶ and also due to their specific *Prabhava*⁷ e.g *Danti* and *Chitraka* have same *Rasa* and *Virya* but *Danti* on administration internally produces *Virechana Karma* but *Chitraka* does not produce *Virechana*. This is called selective action of the drug i.e *Prabhava*. When there is similarity in two drugs in relation to their taste (*Rasa*) and potency (*Vipaka and Virya*)⁸, their Pharmacological action may be different due to *Prabhava* of these drugs.

Modern Concept of *Virechana* (purgation):

The process of *Virechana karma* is regulated and controlled by a special center situated near medulla oblongata in the brain⁹. This center is close to respiratory and vomiting center. The *Virechana* drugs stimulate the *Virechana* (purgation) center and indirectly the vomiting center is relaxed. The sacral Plexus of the spinal cord also helps in controlling and regulating the act of purgation. The act of purgation is also controlled and regulated by local reflex action of the concerned body parts.¹⁰ During the act of defecation the respiration is arrested momentarily, diaphragm is activated and it presses transverse colon. Simultaneously the accessory muscles of the abdomen are also activated and they also help in propelling the fecal matter towards anus along with stimulates lock nerve plexuses and then enforced peristalsis further helps in expelling contents of intestine towards rectum and finally to anal canal. When the voluntary or involuntary act of the defecation starts, the ultimate result is evacuation of bowels.

Modern View:

- **Local action:** Locally mild inflammation occur which is transient due to *Ushana & Tikshna* properties of drugs which irritate the intestinal mucosa. Hence hyperemia results due to arteriolar & capillary dilatation and also exudation of protein substances occur which helps in dilution of toxins.

- **The Irritant Action:** Its Cause inflammation in the small & large intestine & as the mucosa is extensively irritated, secretion rate is enhanced & motility of the intestinal wall usually increases. As a result, large quantities of fluid are propelled by propulsive movements & results in formation of loose stools.

Mechanism of Action :

Depending on the intensity of action, *Virechana* drugs are classified into:

- **Laxative or Aperient:** Which has milder action & eliminates soft but formed stools. All the purgatives increase the water content of faces by :

- A hydrophilic or osmotic action¹¹, retaining water & electrolytes in the intestinal lumen- increase volume of colonic content which make it easily propelled.

- Acting on intestinal mucosa to decrease net absorption of water & electrolyte by which transit is enhanced indirectly by the fluid bulk¹².

- Increasing propulsive activity as primary action and allowing less time for absorption of salt & water as a secondary effect.

- Certain purgatives do increase motility through an action on the mesenteric plexus.

- **Purgative or Cathartic :** It has stronger action resulting in more fluid evacuation. Purgatives modify the fluid dynamics of the mucosal cell & may cause fluid accumulation in human gut by one or more of following mechanisms.

- Inhibiting $\text{Na}^+ + \text{K}^+$ ATPase of villous cells, impairing electrolyte & water absorption¹³.

- Stimulating adenylylcyclase in crypt cells, increasing water & electrolyte secretion.

- Enhancing PG synthesis which increase secretion.

Structural injury to the absorbing intestinal mucosal cells.

- **Action on Nerves:** The influence of *Virechana* drugs are even appreciated on nerves, hormones, liver & crypts of lieberkuhn and it has irritating effect on defecationCentre in Medulla oblongata. The vagus nerve stimulate pancreas & liver to produce secretions. Bile is secreted due to contraction of G.B. & also due to irritation & stimulation of vagus, Bruner's gland are stimulated which secretes mucus. Due to increased peristalsis, Sacral & lumber plexus are irritated, ileo-caecal& anal sphincters are relaxed& these secretions are excreted out & is said to be purgation.

- **Hormonal Action:** Causes irritation of liver & Pancreas which causes increase small intestinal Secretions which adds to irritation of mucosa. Some other hormones also increase small intestinal secretions like secretin&cholecystokinin. Whenever a segment of large intestine become irritated, then mucosa secretes large quantities of water &electrolytes in addition to alkaline mucus. This acts to dilute irritating factors & to cause rapid movement of the feces towards anus. The mechanism by which marked secretion of watery fluid by crypts of Lieberkuhn occur is unknown. However, two active secretory processes occur. Active secretion of chloride ions (into the crypts) & bicarbonate ions. The secretion of chloride ions causes electrical transfer of sodium ions through the membrane. Finally all these cause osmotic movement of water & hence fluidity in the purgation occurs.

- **Elimination of Pitta:** Potent stimulus for causing the G.B. contraction is from cholecystokinin hormone. This causes increased secretion of digestive enzymes from pancreas. The stimulation for this hormone is the presence of fatty

food in duodenum. G.B. is also stimulated by Acetylcholine, secreting nerve fibers from both Vagus& intestinal enteric nervous system. Due to the relaxant action of sphincter of oddi, bile enters into duodenum. This bile's contains bile acids, bile pigments, cholesterol, lecithin, water, sodium, and potassium, bicarbonate ions which are eliminated out & can be called as *pittadosha*.

DISCUSSION: *Virechan* is one of the most important & simplest karma (step) of *Panchakarmas*. It is the most important procedure for the Elimination of vitiated pitta¹⁴ & thus cure *Pittapradoshaj* diseases. It is also very convenient *Shodhan Upakrama* for both patients as well as Vaidya's. In this article, the emphasis is made on the mechanism of action, from Modern &Ayurvedic point of view. Here it is explained that when patient is administered *Virechan Dravya* orally, then how and by which *Gunas* the elimination of *Vikrut Pitta* takes place through anus. In the discussion, the local action and also action & effect on the particular nerves in the nervous system from modern point of view, is also highlighted as the Pharmacokinetics of *Virechan Karma*.

CONCLUSION: The mechanism of action & Pharmacokinetics of *virechan karma* is revealed by *ushna, tikshna, sukhsha, vyavayi, vikasi* and *adhabhaghar prabhav* properties of *virechandravyas*

With this study it is proved that *virechan* is one of the simplest & best method to expel out *prakupit(vikrut)pitta dosha* through anal route.

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