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A REVIEW ARTICLE – PANCHAKARMA (DETOXIFICATION) SHODAN KARMA ACCORDING TO AYURVED SAMHITA

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ABSTRACT

Panchakarma is a specialty of Kayachikitsa (Medicine). Pancha means 'five' and Karma means 'action', so Panchakarma means five action. Panchakarma (five major BioPurification Therapies) a) Vamana, b) Virechana, c) Basti, d) Nasya, e) Raktastrav. These five procedures use for internal purification of the body through the nearest possible route. In the present article we are discussing regarding the detoxification corelated to ayurved Samhita.

Keywords: Panchakarma, Kayachikitsa , Shodan Karma

INTRODUCTION

Ayurved deals with the preventive and curative aspects of health. Panchakarma therapies are popular in the field of Ayurvedic disease management. Though their effect and safety is well established by the evidence of experiences since many centuries. This therapy restores balance with natural law to maintain the equilibrium of doshas and stabilize the internal milieu of body. Panchakarma helps to eliminates toxins in a more stable way, allowing healing of muscles, cleaning of srotas, improving digestion and mental functions. Panchakarma a specialty of Kayachikitsa presents a unique approach of Ayurved with specially designed five procedures of internal purification of the body through the nearest possible route.¹ Shodhana is appropriate for person those posses good strength, Mandagni and severity of disease. ²According to Ayurvedic texts our body is a network of Srotasas. Diseases occur when toxins get accumulated in body and clog these Srotas, have to be expelled out in order to keep the body healthy. Through Panchakarma therapy these toxic clogs are cleared to restore normal physiological process. Panchakarma therapy is not only for diseased person it can also be administered to a normal person to prevent diseases and keep his body healthy. Therefore it is an important therapy for maintaining the health of individuals and also regulates with imbalance doshas to cure the diseases. The word 'Panchakarma' means five karmas. The "Pancha" word is a symbol of

blessing of the god called "Mangalam" and this represents that all the procedures of treatment should requires the presence of god. There is reference that all constituent of universe forms body or Pancha mahabhuta are main constituents of the body. All living and non-living things are a combination of pancha bhuta (prithvi, apa, thejas, vayu, akasa). To regulate the living body, Acharyas concised pancha bhutas into tri doshas (vata, pitta, kapha) and therefore the main aim of treatment is to stabilize the equilibrium among these doshas. 'Karma' word may be defined as method, procedures, techniques etc. Here it can be describe as procedures of treatment and preventive measures. According to Ayurveda, vyadhi has been defined as the state in which both the body and mind are subjected to pain and misery. This is the state of imbalance of three doshas.

Plants are the prime source of medicine in Ayurveda. Several compounds have been isolated from medicinal plants and introduced for the service of mankind; however most of these medicines have been withdrawn due to their toxicity or side-effects.[1] Traditionally, plants having various classes of phytochemicals are still in use either in their crude form or after proper processing. Though most of the plant drugs are safe, yet few are toxic for human health. These poisonous/toxic plants are categorized as visha(poison) and upavisha (toxic but not lethal for human health) in Ayurvedic texts[4]and also listed in the schedule-E of Drugs and Cosmetics Act 1940[5]Hence, to promote

and introduce their use for medicine, such plant drugs must be detoxified or purified before their use.[6] The detoxification or purification process of any toxic material used for medicinal purposes is termed as "Śodhana". In Ayurveda, Śodhana is in practice since the times of Caraka Saṁhitā,

The measures undertaken to restore the doshika equilibrium is called chikitsa.³ In Ayurveda, chikitsa has been broadly classified into two groups: 1. Shamana: The treatment, which doesn't eliminate the Doshas or elevate those, which are in normal condition but tries to bring equilibrium in the imbalanced doshas, is called as "Shamana". It may be done in seven ways⁴ 1) Pachana 2) Deepana 3) Kshudha 4) Trushna 5) Vyayama 6) Aatapa 7) Maruta 2. Shodhana: The treatment through which increased doshas are eliminated from the body is referred to as "Shodhana"⁵. Shodhan is considered as a prominent process. Which doshas are treated by lahghana, pachana are reimbanced by some cause, but which doshas are eliminated by Shodhan are not reimbanced again.⁶ Five types of Shodhana:⁷ 1) Basti 2) Vaman 3) Virechana 4) Shirovirechan 5) Raktastrav.

Panchakarma therapy of Ayurveda has attracted attention of the people worldwide as it is an unique sort of treatment of various chronic, auto immune, hormonal, degenerative disorders, etc., where other sorts of treatments have no satisfactory answer. Acharya Charaka has highlighted the role of Panchakarma therapy by stating that the disease treated by Shodhana will never recur, whereas the treatment

with Shamana therapy may recur in due course of time.[3]

Many species of the genus *Aconitum* viz., *Aconitum ferox* Wall., *Aconitum napellus* Linn., and *Aconitum chasmanthum* Holmes ex. Stapf. are known under the common name "Vatsanābha" in Sanskrit and "Aconite" in English. The roots of all the three plants are extremely poisonous but useful in the treatment of various diseases such as fever, rheumatoid arthritis, sciatica, hypertension, and acts as "rasāyana" (immunomodulators) after their detoxification.[17,18,19] Most of the alkaloids present in the root of *Aconitum* species at higher doses are reported to have cardiotoxic and neurotoxic effects. Isolated compound (Aconite) from *Vatsanābha* at a dose of 2 mg can cause death, while 1 g of *Vatsanābha* is fatal for human being.[22] The root of *Vatsanābha* was used as poison for hunting animals in ancient times by tribals.[23] Overdosing of traditional Ayurvedic formulations of *Vatsanābha* may cause hypotension, bradycardia or bidirectional tachycardia.[22,24,25] Due to such reasons, the therapeutic dose of *Vatsanābha* mentioned in Ayurvedic system of medicine is 8 mg to 16 mg/day.[26] Its purification process includes svedana (boiling) in *dola yantra* using *Godugdha* for 3 h daily for three continuous days, followed by washing with water thrice and drying under sun light.[27,28] After Śodhana process, the total alkaloid content decreases,[11] but the contents of less toxic substances such as aconine, hypoaconine, and benzylhypoaconine increases[29,30] possibly due to conversion of the toxic aconitine into aconine or hydrolysis of the alkaloids to

their respective amino alcohols after Śodhana process.[31,32] In another study, it has been reported that the purified form of *A. carmichaeli* produces cholinergic stimulation which prevents the cold-stress-induced hypothermia and immuno-suppression.[18] Moreover, the unpurified root of *A. napellus* has been reported to cause a significant rise in heart rate and changes in electrocardiogram as compared to purified Aconite. It has been reported that *Gomūtra* converts Aconite to a compound with cardiac stimulant property, whereas, raw Aconite showed cardiac depressant properties.[19,29,33,34] Śodhana by both *Gomūtra* and *Godugdha* makes Aconite devoid of cardiac and neuro-muscular toxic effects without affecting its antipyretic activity.[11] *A. chasmanthum* is another species which is well known for its cardiac and neuro-toxicity. According to Sarkar *et al.*[35] *A. chasmanthum* showed toxic effects, which leads to the impairment in kidney and liver functions. Śodhana with *Gomūtra* reduces the toxic effects of Aconite significantly.[30,35]

In vivo and *in vitro* studies on frog heart showed that *A. ferox* has potential effect to depress the heart rate by its positive inotropic and negative chronotropic effects and these effects may be mediated through cholinergic stimulation or by direct action on the heart muscle.[36]

Guñjā

Guñjā (*Abrus precatorius* Linn., Family: Fabaceae) roots, seeds, and leaves have been used traditionally for their purgative, emetic, tonic, aphrodisiac, and hair growth promoting properties after being processed

through Śodhana.[37,38] Since ancient times, it has been used as fish poison, arrow poison and also for criminal purposes of poisoning both humans and cattle.[39] *Abrus* seeds contain a toxic lectin, abrin (an albumotoxin), a fat-splitting enzyme, a glucoside (abruccic acid), urease, abarnin, trigonelline, choline, hypaphorine, and steroidal oil that have abortive effects.[40,41,42] Abrin has a fatal dose of 0.1–1 µg/kg in humans and it is reported that boiling renders the seed harmless.[43,44] In Śodhana of *Guñjā* seeds, they are subjected to the *svedana* in *dolā yantra* with *Godugdha* or *Kāñji* for 3–6 h. The Śodhita material is then subjected to washing with hot water and drying under shade.[28] During the Śodhana process, color of the media changes due to the removal of colored materials from the endosperm of the seeds and subsequently there is loss in weight.[45] According to Singh *et al.*[46] High performance liquid chromatography (HPLC) study of the *Guñjā* extract before and after the Śodhana process showed that the level of toxic hypaphorine decreases, whereas the less toxic alkaloid abrine increases. Perhaps during Śodhana process, a major part of hypaphorine might have undergone transformation into abrine by reduction of its tertiary amino group into the primary amino group. Percentage of protein present in *Guñjā* also reduces after Śodhana.[46] In another study, chromatographic evaluation confirms the absence of the steroidal oil in Śodhita *Guñjā* seed, which is responsible for the abortifacient effect. The LD₅₀ dose of *Guñjā* was reported to increase from 2 to 5 g/kg (*aśodhita*) to ≥5 g/kg (Śodhita). The efficacy studies on hair growth and antibacterial effect of the Śodhita *Guñjā* show significant result.[45,47]

Kupīlu

Kupīlu (*Strychnos nux-vomica* Linn., Family: *Loganiaceae*) is extensively used in various conditions such as nervous debility, paralysis, and weakness of limbs, sexual weakness, dyspepsia, dysentery, and rheumatism after proper *Śodhana*. [48,49] It is used as a potent *rasāyana* drug for old age problems. [50] *Kupīlu* has been reported to contain active alkaloids (strychnine and brucine), which are highly poisonous. [51,52] Different techniques [53,54,] have been used for the analysis and quantification of strychnine and brucine in its raw and processed seeds. *Kupīlu* is used not only in Ayurveda but also in Chinese and Unani system of medicine after processing. There are several specific *Śodhana* procedures, which have been adopted to purify the toxic materials from the seeds of *Kupīlu*. Classical method of purification includes soaking of *Kupīlu* seeds in liquid media (one after another) for 3–20 days. The liquid media include *kāñji* (soaking for 3 days), *Godugdha* (boiling for 3 h), *Gomūtra* (7 days soaking) and *Goghṛta* (fried till brownish red in color and swollen) [3] whereas traditional practitioners use castor oil (*Eraṇḍa taila*) instead of gṛita to fry or immerse the seeds in the exudates scraped from the fresh leaves and stems of *Aloe vera* (*ghṛtakumārī*) for 15 days, followed by ginger juice (*Ādraka svarasa*) for 7 days for purification. After *Śodhana* process, the seeds are washed with lukewarm water where the outer seed coat and embryo are removed from the cotyledons. Similarly in Chinese system of medicine, *nux-vomica* is fried with sesame oil for detoxification. *Kupīlu* after *Śodhana* exhibit its low percentage of total alkaloid content (strychnine and brucine); and

the toxic loganin glycoside is eliminated. Detoxification of *Kupīlu* might be due to the chemical changes that causes the enhance N-oxidation and conversion of strychnine and brucine into less toxic derivatives such as isostrychnine, isobrucine, strychnine N-oxide, brucine N-oxide, and reduced level of loganic acid content of the seeds. The preliminary phytochemical investigation also shows significant changes in the level of phytoconstituents in different methods of *Śodhana*. Being acidic in nature, *kāñji* is a better extraction medium because it may facilitate the extraction of alkaloids and other phytochemicals. *Ādraka svarasa* also produces better results in reducing the toxic constituents (alkaloids) present in the seeds. [9] Though larger doses of strychnine are known to be lethal, in lower doses it is known to be a stimulator. *Gomūtra Śodhita Kupīlu* shows better pharmacological potency than the raw seeds. It has also been reported that *Śodhana* processes of *Kupīlu* enhances its hepatoprotective potency.

The detoxification study of *S. nux-vomica* seeds was performed by Katiyar *et al.* by traditional methods using aloe and ginger juice, by frying in cow ghee and by boiling in cow milk. All the treated samples were extracted with ethanol. Ethanol extracts were used for the evaluation of spontaneous motor acting (SMA), pentobarbitone-induced hypnosis, pentylenetetrazole (PTZ)-induced convulsions, diazepam-assisted protection and morphine induced catalepsy. Strychnine and brucine content in the processed seed reduced up to 67.40% and 46.58% respectively as compared to unprocessed seeds. In another experiment, Mitra *et al.* [75] also performed the detoxification study of *nux-vomica* seeds by using cow urine, cow milk and both. After the treatment,

strychnine and brucine contents were determined by HPLC. Maximum reduction in the alkaloids content was found when seeds were purified in cow urine (soaking for 7 days), followed by boiling in cow milk for 3 h.

In addition, if Shamana drugs are administered after proper course of Shodhana, then it provides additional relief and thus helps in eradicating the diseases completely. Changes in life style, irregularities in dietary habits became major issues in current scenario and are responsible in manifesting a number of ailments. Significance of lifestyle and diet, etc., have been well recognized in Ayurvedic classics and emphasis a following the guidelines on *Dinacharya*, *Rutucharya* in eradication of various diseases can be readily observed in them. [9-14]

Deepana and Pachana

Panchakola Churna increases the *Agni* and then helps in *Ama Pachana*.

Snehana

Snehapana with *Panchatikta Ghrita* as a *Purvakarma* subsides the symptoms like *Rukshata*, *Daha*, etc., Similarities in chemical and physiological nature in *Ghrita* and human cell membrane intensifies the penetration of *Sneha* (*Panchatikta Ghrita*) in to deeper tissues causing partial rejuvenation of cell, smoothing of vitiated *Dosha* (stagnated metabolic wastes).

Vamana and Virechana

Soothened *Doshas* will get liquefied and reaches to *Koshtha* by *Swedana*, which can be easily eliminated by the action of *Vamana* and *Virechana*.

Thus it is clear that the toxins or nitrogenous waste materials that are collected in lower intestinal cells are removed by *Virechana* and thus cleansing the lower passage and rejuvenating each and every cell of lower GIT.

These *Shodhana* (*Vamana* and *Virechana*) probably may leads to certain endogeneous changes in the body responsible for the alleviation of psoriatic pathological process.

Derma-care (Kalpit Yoga)

Most of these drugs have following properties – *Kushthaghna*, *Krimighna*, *Rakta Shodhana*, *Kandughna*, *Amapachana*, *Medhya*, *Rasayana*, *Kaphaghna*, *Twachya*, *Yakriduttejaka*, *Agni Vardhak*, and also *Tridoshaghna*. The synergistic actions of *Tikta* and *Kashaya Rasa* dominant herbs and minerals are likely to check the etio-pathogenesis of *Mandal Kushtha* (Psoriasis) and arrest its progress. induration of leg, torso, arm, and head; scales of leg, torso, and head; coverage area of torso and arm; *Mandal Rupa* and *Shoka*. Only *Derma-Care* is more effective to control *Krodha*. *Neotrexate* (Methotrexate) is more effective to control erythema in torso and head; scales in arm; coverage area of leg and head; *Kandu* and *Chinta*. *Shodhana* independently have shown much better results than the patients treated with *Shamana* therapy (*Derma-care* yoga). *Neotrexate* (Methotrexate) independently have shown much better results than the patients treated with *Shodhana* alone or *Shamana* therapy (*Derma-care*) alone. *Shodhana* followed by *Shamana* therapy have shown better results than the patients treated

with Shodhana, Shamana therapy or modern medicine alone.

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