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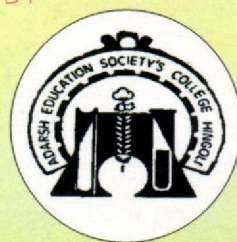
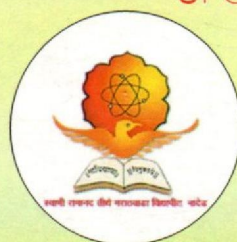
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Medicinal Plants Used in Ayurved Panchkarma

N. Jadhav¹ and S. Jadhav²

¹Dhanvantari Ayurved Medical Collage & Hospital, Udgir (M.S.).

²Suhrut Ayurved Hospital & Research Center, Udgir (M.S.).

E-mail: drnarayanj52@gmail.com

Abstract:

Ayurveda is the science of life and one of the oldest systems of the medicine in the world. Which deals with the promotion and maintenance of positive health of masses, besides providing treatment for different types of ailments in the society. According to WHO approximately 80% world population in developing countries depends on traditional medicines for primary health care, (WHO-2002) and in modern medicine too, nearly 25% are based on plant derived drugs (Tripathi-2002). India is well known for its rich Biodiversity and has been called The **Medicinal Garden of the world**. The approach of the *Ayurveda* to the treatment of the disease can be divided into two major categories, *Shodhana* and *Shamana*. *Shodhana (Panchkarma)*-curative detoxification of which aim to purify the human body from organ to cellular level. The five stages of *Panchkarma* along with the pre treatment and post treatment processes have been systematically designed to achieve this purpose, Several medicinal plants play a very important role in all these processes as a key ingredient of the treatment. Since these plants inherently possess specific therapeutic properties, the quantity and composition of specific medicinal plant to be used for an individual is determined by his body constitution and the specific disease to be cured. *Panchkarma* are *Vaman*, (therapeutic emesis) *Virechan* (therapeutic purgation) *Anuvasan* (Medicated oil enema) *Ashtapana* (Medicated Decoction enema) *Nasya* (Nasal insufflations).

Keywords: Ayurveda, Panchakarma, Vaman, Virechan, Anuvasan, Ashtapana, Vasti, Nasya, Medicinal Plants.

Introduction:

Ayurveda is the science of life and one of the oldest systems of the medicine in the world. Which deals with the promotion and maintenance of positive health of masses, besides providing treatment for different types of ailments in the society. Its antiquity going back to the ancient Vedas. The classical wisdom of the Ayurveda has

survival down the ages through its two sets of authentic texts popularly known as Brihatrayi (Charak, Sushruta, Vagbhata) & Laghutrayi (Madhava, Sharangdhar, Bhavprakash). These texts describe in great detail the fundamental principles of Ayurveda, concept of health & Disease, Diagnostics, principles and modalities of therapy, materia medica and pharmacy.

According to WHO approximately 80% world population in developing countries depends on traditional medicines for primary health care, (WHO-2002) and in modern medicine too, nearly 25% are based on plant derived drugs (Tripathi-2002). India is well known for its rich Biodiversity and has been called The Medicinal Garden of the world.

According to Ayurveda The body is made up of Dosha (Humors), Dhātu (body tissues) and Mala (excreta). The Doshas vata, pitta and kapha, which broadly represent the Nervous system, the metabolic system and Nutritive system respectively to keep the human body in balance. Whenever the delicate balance between these Doshas is disturbed, a disease may be manifested. The objective of Ayurvedic system of treatment is to restore the original state of equilibrium between the Doshas.

Basic Principles of Ayurvedic treatments:

Ayurvedic approach to prevent and cure the disease, swings around the broad principles, viz 1) Nidan Parivarjan i.e. elimination of the cause of the disease. 2) Samprati Vighatan i.e. reversal of pathogenesis. The chronic disease is to be treated in a comprehensive manner if a real cure is to be achieved. Ayurveda advocates two fold approach to Cure. i.e. Shodhana & Shamana^(1,2)

Shamana:

It is a process of pacification or palliative management of disease by administration of drug (medicine), diet and life style modifications.

Shodhana (Panchkarma).

It is a process of curative detoxification, which aims to purify the human body from organ to cellular level. This is a unique concept of Ayurveda. It envisages not only the visceral cleansing, rather it aims at the total bio-purification up to molecular

level. suitably administered Shodhankarma is expected to cleanse the hallow organ, cell, cell membranes, and their pores effecting the bio-purity of intracellur and extracellular contents and structures.

The complete process of panchkarma consist of three steps, the first step is the poorv karma, which is the preparatory procedure required before the main procedure . the next step is the pradhan karma or main procedure,which is followed by the paschaat karma or the post-operative procedure, dietary regimen , to restore the body,s digestive and absorptive capacity to its normal state.It also consists of the Rasayana(Rejuvenation) and Vajikarana (Aphrodisiac) processes.

Poorvakarma:

PoorvaKarma (Pre-operative) — Before starting panchkarma ,the patient is prepared to enable him to receive the full benefits of the main treatment is called poorva karma . It consists of three main processes 1) Deepana (Digestive juce stimulants) & Pachan (Digestant or Aam Pachak) – i.e. chitrak, Trikatu.

2) Snehan (oileation) and 3) Swedan (Fomentation) These methods helps to dislodge the accumulated poisonous substances in the body, thus preparing them for their complete removal.

Snehana (oileation):

It stands for lubrication of body systems, by the administration of medicated fatty substances or the massage of oil over the skin for a specific period (i.e. internally and externally). A number of Snehana therapy methods described in the Ayurvedic texts .The use of oleation results in unctuousness and softness of morbid doshas, which become easily extractable and ready to move from places, where their occupation undesirable and unwanted. It is performed by using substances of vegetable origin as well as the substances of animal origin such as milk, curd Ghee, fat and bone marrow. the use of a specific snehana substance also depends upon the Season and the problem of patient. the Ghee has been recommended during the rainy season , oil is during winters and the use of fat and bone marrow has been recommended during the spring season .^(5,6)

Swedana (Fomentation):

It is process to induce the sweating (Sudation) by application of heat in order to loosen and excrete the toxins. It can be done either locally or on the full body, either externally or internally, depending on the specific needs of the patient. The required heat is generated either directly (Sagni) or indirectly (Niragni). The Shwdana liquefies the doshas, clears the obstructions in the channels of circulation and directs the doshas to selective places, from where they can be expelled out easily. Specific plants decided on the basis of nature and intensity of doshas are fused in to the steam and the combined action of heat and the herbs, dilate the channels of the body allowing the stored toxins to move back in to the digestive system. The use of Swedan relives stiffness, heaviness and coldness in patient. Some of the common techniques of the thermal sudation (Sagni) are mixed fomentation, Hot bed sudation, steam kettle, tub bath sudation, sudatorium, stone bed sudation, trench sudation, ground bed sudation cabin sudation, pitcher bed sudation and pit sudation. Similarly, non thermal sudation (Niragni) can be provided by means of exercise, warm room, hunger, heavy clothing, excessive drinking, fear, anger, plaster or sunshine. ^(5,6)

Pradhan Karma (Panchkarma) (main treatment) – these are

- 1) Vaman (Therapeutic Emesis)
- 2) Virechana (Therapeutic Purgation)
- 3) Anuvasana (Medicated Oil Enema)
- 4) Asthapana ((Medicated Decoction Enema)
- 5) Nasya (Nasal Insufflations).

The main process of panchkarma is taken up after completing the poorv karma, Pradhankarma is divided in to five processes.

Vaman karma (Therapeutic Emesis):

It means to induce vomiting ;it is a bio-cleansing measure meant for the elimination of kapha dominant doshas which are brought back into the stomach as the result of poorvkarma ,specific medicines in different forms are administered to induce Emesis,expelling the morbid doshas through the oral passage .It is usually administered in Acid peptic disorders ,indigestion,dibetes, respiratory, skin & psychological diseases. However because of its therapeutic effect, it is also recommended for normal persons in the Spring season. Effective Vamankarma is

usually indicated by 4 to 8 expulsions during emesis . Some important plants used in vaman karma have been listed in (table-1) ^(4,5)

Table 1: Medicinal plants used in vaman karma

Comman Name	Botanical Name	Family	Habitat	Useful part	Ayurvedic indications
Madanphal	Randia spinosa	Rubiaceae	tree	Fruit	Emetics, anti helmenthic.
Yashtimadhu	Glycirhiza glabra	Leguminoceae	Tree	Leaf, seed, oil, bark	Emetis, antacid,
Neem	Azadirachta indica	Meliaceae	Tree	Whole plant	Antibacterial, antimalerial, antinflammatory
Pippli	Piper longum	Piperaceae	Climber	Root, fruit	Antibacterial, antispasmodic, antinflammatory. Hypoglycemic.
Kutaj	Holarrhena antidysenteria	Apocynaceae	Tree	Bark, seed.	Antibacterial antihelminthic.
Ela	Elletaria cardamomum	Zniziaeberace	Shrub	Fruit, seeds.	Spermatogenesis, anti haemaorraegic
Jimut	Luffa echinata	Cucurbitaceae	Climber	Fruit	Hepato protective, anti tussive, anti asthmatic
Dhamargav	Luffa cylindrical	Cucurbitaceae	Climber	Fruit, flower, leaf.	Blood purifier, anti tussive, anit asthmatic
Ikshvaku	Lagenaria siceraria	Cucurbitaceae	Climber	Fruit, leaf, root	Antipyretic, antibacterial
Kratvedhan	Luffa actangula	Cucurbitaceae	climber	Fruit, leaf, root	Antinflammatory, hepatoprotective

Virechana Karma (Therapeutic Purgation):

The process of elimination of doshas, especially pitta by inducing purgation is known as virechna. It is very useful and effective therapy to prevent and cure diseases caused by pitta Dosha. The intensity and dose of purgation is to be used depends on

the body constitution and type of disease. Medicinal drugs are orally administered in the form of powders, decoction, tablet, capsule, and paste. It is mainly indicated in constipation, worm infestation, jaundice, skin diseases, paralysis, asthma, diabetes and chronic fever. Effective virechan karma is usually indicated by 10 to 30 expulsions during purgation. Some important plants used during this procedure have been listed in (table-2)^(3,4)

Table : 2 medicinal plants used in virechan karma

Coman name	Botanical name	Family	Habitar	Useful part	Ayurvedic indications
Trivrut	Operculena turpethum	Convolvulaceae	Climber	Root, bark	Anti inflammatory, anti bacterial, antihelmenthic
Haritaki	Terminalia chebula	Combretaceae	Tree	Fruit	Anti microbial, purgative, anti spasmodic, hypolipidemic
Amalaki	Emblica officinalis	Euphorbeaceae	Tree	Fruit	Anti uleer, anti microbial, anti oxidant, hypolipidemic
Bibhitak	Terminalia bellirica	Cimbretaceae	Tree	Fruit	Anti microbial, purgative, anti spasmodic, hypolicpidemi.
Danti	Beliospermum montanum	Euphorbeaceae	Shrub	Root, seed, leaf	Purgative, hypotensive, antileukaemic
Nili	Indigofera tinctoria	Legumenoceae	Shrub	Whole plant	Purgative, diuretics, antiulcer, anti histaminic
Vacha	Acorus calamus	Araecae	Shrub	Root	Analgesic, anticonvulsant, sedative, hypotensive, hypothermic.
Kampilak	Malluotus	Euphorbeaceae	Tree	Fruit	Antiulcer, antihistaminic, antihelmanthic.

Gavakshi	Cirulus colocyntis	Cucurbitaceae	Climber	Fruit, root	Purgative, antispasmodic.
Kshirini	Euphorbia thymifolia	Euphorbeaceae	Shrub	Whole plant	Purgative
Pilu	Salvodora persiea	Solvadoraceae	Shrub	Whole plant	Analgesic, antispasmodic
Aragvadh	Cassia fistula	Legumenoceae	Tree	Flower, Fruit pulp, root bark	Anti helmanthic, bloodpurifire,
Draksha	Vitis venifera	Vitaceae	Climber	Fruit	Carmenitive, cardio tonic, uterine tonic
Hijjal	Baringtona acutangula	Lecythidaceae	Tree	Fruit, root, bark, leaf	Antipyretic, diuretics, blood purifire
Karanj	Pongamia pinnata	Legumenoceae	Tree	Bark, leaf, seed	Anti helmenthic anti goiter,
Jaipal	Croton tiglium	Euphorbeaceae	Shrub	Seed, seed oil	Anti inflammatory, strong purgative, antihelmenthic.

Vasti karma (Therapeutic Enema) :

The process by which the medicines are administered through rectum or genitourinary tract is known as vasti. Which is mainly used for pacification of vata dosha. The site of vāta Dosha is considered as the large intestine. It is mainly indicated in neurological, rheumatological, digestive, psychological, gynecological, urological, disorders and loss of body strength.

Anuvasan vasti (Enema using medicated oils):

Administration of medicated oil through anal or genitourinary route (urethra/vagina). In this procedure medicated oil is used according to patient's constitution. Frequency of enemas also depends on constitution and vitiation of Dosha. The effective vasti karma indicated by symptoms like proper evacuation of stool, urine & flatulence, lightness in body, increased appetite, taste in meals &

increased strength. After this karma patient should follow regimen like use of warm water, light diet and adequate rest. Patient should avoid excessive mental and physical tiredness. The dose of anuvasan vasti vary from 100ml to 250ml according to condition, it may practice as daily procedure.

Asthapana vasti. (Enema using medicated decoction):

The process in which medicated decoction, honey, rock salt, medicated oil, and herbal paste are used as ingredients and are mixed in specific manner is known as asthapana vasti. These ingredients, number of vasti and dose (500ml to 1000ml) used according to constitution, involved doshas and disease. The plants used during anuvasan and asthapan vasti karmas have been listed in (table-3)^(4,5)

Table : 3 medicinal plants used during anuvasan & aasthapan vastikarma

Comman name	Botanical name	Family	Habitat	Useful part	Ayurvedic Indications
Patla	Stereospermum suaveolens	Bignoniaceae	Tree	Whole plant	Hiccoup, hyperacidity
Ahnimanth	Premba mucronala	Verbenaceae	Tree	Leaf, root, skin	Antipyretic, anti inflammatory.
Bilva	Aegle marmelos	Rutaceae	Tree	Leaf, flower, fruit, seeds.	Antidireal, antihelminthic
Shonyak	Oroxylum indicum	Bignoniaceae	Tree	Rootbark	Antidireal, antiinflammatory.
Shalparni	Desmodium gangeticum	Leguminoceae	Climber	Whole plant	Anti-inflammatory, analgesic, anti asthmatic
Prshniparni	Uraria picta	Leguminoceae	Climber	Root	Anti dirrheal, antihæmorrhagic anti inflammatory diuretics.
Bala	Sidacordifolia	Malvaceae	Shrub	Leaf, root, seed.	Anti hæmorrhagic, immuno modulatory
Kashamari	Gmelina arborea	Verbenaceae	Tree	Root, fruit	Antacid, antipyretic, diuretic, anti hæmorrhagic
Brihati	Solanum xanthocarpum	Solanaceae	Shrub	root, fruit	Analgesic, anti inflammatory, anti asthmatic

Erand	Ricinus cumminus	Euphorbiaceae	Tree	Leaf, seed, root, oil	Anti inflammatory, analgesic, purgative.
Punarnava	Boerhavia diffusa	Nyctaginaceae	Creeper	Whole plant	Anti inflammatory, analgesic, diuretics.
Badar	Ziziphus sativus	Rhamnaceae	Tree	Fruit, leaf	Carminative, digestive, cardio tonic,
Kulath	Dolicos biflorus	Leguminoceae	Climber	Seeds	Antipyretic, anti inflammatory.
Guduchi	Tinospora cardifolia	Menispeamaceae	Climber	Stem, leaf	Anti diabeticslantipyretics, anti haemorrhgic
Madanphala	Randia spinosa	Rubiaceae	Tree	Fruit.	Emetics, anti pyretics.
Palash	Butea monosperma	Leguminoceae	Tree	Bark, flower, seed, alkali, gum	Anti helmenthic, diuretics.
Yava	Linium usitaissimum	Linaceae	Shrub	Seeds, oil, flower	Cardio tonic, anti tussiv, aphrodisiac

Nasya (Shiroverechana) (nasal insufflations):

Administration of different herbs, medicated oils or ghee through the nose in a specific quantity and duration in order to remove and balance the aggravated doshas from the head, nose and throat. It is mainly indicated in diseases of head, ENT diseases, neurological, endocrine disorders. It should be given according to season. The dose of the medicine is 4 to 8 drops in each nostril. Procedure is followed by local massage and fomentation. Effectiveness of procedure is indicated by lightness in head and body, good sleep, proper functioning of sense organs and mind and elimination of vitiated doshas from nasal sinus and nose. The herbl plants used in this procedure is listed in (table-4).^(3,4)

Tabel : 4 Medicinal plants used in Nasya Karma

Comman name	Botanical name	Family	Habitat	Useful part	Ayurvedic indication
Apamarg	Achyranthes aspera	Amarrnthaceae	Herb	whole plant,	Antipyretic, alkali
Pippali	Piper longum	Piperaceae	Climber	Fruit	Antiasthmatic, antacid
Marich	Pipar nigram	Piperaceae	Climber	Fruit	Antitussive, antipyretic
Vidang	Embelia ibes	Myrsinaceae	Climber	Seed	Anti tussive antidiabetic
Jirak	Cuminum cyminum	Umbellifereae	tree	Seed	Analgesic, antistamine
Shirgu	Maringa oleifera	Maringaceae	Tree	Root, bark, seed	Analgesic, spermatogenesis
Sarshap	Brassica campestris	Crucifereae	Herb	Seed, seed oil	Antistamine, appetizer
Pilu	Salvadera Persia	Salvodoraceae	Herb	Whole plant	Antiinflammatory, antihaemmoroid
Yela	Elletaria cardamomum	Zinziberaceae	Tree	Fruit, seed	Antiasthematic, leucorrhoea
Tumbaru	Zanthoxylum aramatum	Rutaceae	Tree	Bark, fruit	Antiasthematic,
Ajgandha	Withinia somnifera	Solanance	Tree	Root	Spermatogenesis, immonomodulator
Tulsi	Ocimum sanctum	Labiatae	Herb	Whole plant	Antipyretic, diuretic
Shirish	Albizia lebbeck	Leguminoseae	Tree	Whole plant	Antiulcer, antihistimine
Haridra	Curcuma longa	Zinziberacæae	Herb	Root	Antiasthamatic, antidiabetic
Daruharidra	Berberis aristata	Berbiridaceae	Tree	Root, fruit	Antiulcer, antihistamine
Rason	Allium sativum	Liliaceae	Herb	Oil.	Antidirreal, digestive
yotishmti	Celastrus pauciculatus	Celastraceae	Climber	Seed	Antiflatulence, antihistamine
hunthi	Zingibar officinale	Zinziberaceae	Herb	Root	Antiasthamatic, digestive

Paschat karma (post-operative regimen):-

The patient should take complete physical and mental rest for an equal period of time which he has undergone the therapeutic procedure. It is done as the patient requires to regain the strength of dhatu and to come normalcy. During panchakarma digestive fire gets weak that's why peyadi samsarjana karma suggested by acharya i.e. liquid carbohydrates, plant proteins, animal proteins & fats, when digestion improves whole diet is suggested.

Shodhana Chikitsa is considered superior to *Shamana Chikitsa* as the chances for recurrence of the disease so treated are remote.

Panchkarma increases the acceptability of body to various therapeutic regimens like *Rasayana* (Rejuvenation) and *Vajikarana* (Aphrodisiac). Thus, *Panchkarma* therapy is believed to impart radical elimination of disease causing factors and maintain the equilibrium of Doshas.

After that patient is suitable for his desired treatment. i.e. for Chronic disease or Rejuvenation and Aphrodisiac, etc.

Dicussion:

The *Shodhana Chikitsa* (Bio-cleansing therapy) of Ayurveda, which includes *Panchkarma* treatment, basically intends to eliminate the toxic element from the body and thereby enhances the immunity of the body. The toxic products of body metabolism can be broadly divided into water soluble, fat soluble and volatile substance. The volatile substance like carbon dioxide can easily be removed from the body through lungs. While there are number of mechanisms available to get rid of the water soluble toxic materials through kidney, sweat and other body secretions, removal of fat soluble toxic materials very difficult and only liver can play a small role. Hence it is likely that, there would be accumulation of fat soluble toxic products in the body. Liberal use of oil and ghee in various *Panchkarma* procedures makes it possible to eliminate these toxic products. In modern day medicine, we understand that molecules moves from higher concentration to lower concentration when separated by a diffusible membrane. The skin and the mucous membrane provide an excellent opportunity for this maneuver. While skin of in average adult only provides a surface

area of less than 2 square meters, the gastrointestinal Tract is many meters long with a highly permeable mucous membrane. The mucous membrane of gut has many folds and projection in the form of villi and microvilli, which help to increase the total exchange area, equivalent to a tennis court. During various Panchkarma procedures oil is used liberally, thereby removing toxic, fat soluble waste materials. Prior to the five *Pradhan Karmas* (main procedures) Purva Karma (preparatory measures) i.e. Bahya Snehana (External oleation) and sarvanga Swedana (whole body Sudation) are given to the patient. These procedures further helps in removing toxic materials from the body. Swedana procedure using hot steam increases the local skin blood flow there by enhancing the exchange process. It is know that the fat soluble toxic substances are stored in the body fat. Fat in human body is largely located below the skin and inside abdomen, around the mesentery of the gut .During various Panchkarma procedures, exposure of skin and gut mucous membrane (Which are very close to the fat stores) to a large quantity of oil seems to be a logical and ideal procedure. Repetition of these procedures over several days will largely remove the toxic wastes by concentration gradient. The Ayurvedic medicines added to the oil might give additional benefits. ^(9,10)

Benefits of Shodhana:

Vamana & Virechana - Procedurs Provide The Following benefits: Clarity of the mind, Strength to the sense organs, Stability to the tissues, Improvement of digestion, Slowing down of ageing process etc.

One of the important features of these procedures is the safety and easiness by which these can be administered without any major side effects. In Ayurvedic practice of Panchakarma, Dosha (humoral factors), Prakriti (body constitution), Kala(season), drug availability etc. are always of prime concern.

Conculsions:

If the body is biologically purified and cleansed the physiology is restored optimumly and pathology reversed . The nutrients reach at their desired destinations easily and their bio- availability is enhanced. The entire process of Dhatuposhan (Tissue Nutrition) and Dhatuparinaman (Tissue Transformation) is accelerated.

The medicaments administered in purified body reach at their sites easily and effectively and possibly, even a relative smaller dose of medicine may produce greater effect.

When the Srotas (System) is purified, the administered drugs and their metabolites may not stagnate unduly long in body and hence the drug toxicity and side effects may get reduced.

This is why panchkarma is advocated as pre-requisite for shaman chikitsa. ^(7,8)

It is also belived that panchkarma could also be an useful adjunct for practice of modern medicine and panchkarma is currently advocated as a pre-requisite for modern chemotherapy too, to help, to reduce dosage and toxicity.

Thus there is great need, to standardize panchkarma therapy on scientific lines in accordance with, procedures, dosages, medicinal plants, its phytochemical, pharmaceutical values and to popularize its utility and to improve its technology to make it more non-invasive and user friendly. ^(6,11)

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