

## Uses of medicinal plants in *Panchakarma* Ayurvedic therapy

Mradu Gupta<sup>1\*</sup> & BP Shaw<sup>2</sup>

<sup>1</sup>Department of *Dravyaguna*, <sup>2</sup>Department of *Kayachikitsa*, Institute of Post Graduate Ayurvedic Education & Research, SVSP Hospital, Kolkata 700009, West Bengal  
E mail: mradu\_gupta@hotmail.com

Received 4 July 2007 revised 28 February 2008

The paper deals with the use of various medicinal plants during the *Ayurvedic* process of *Panchakarma*, a cleansing process that eliminates toxins from the body thereby curing diseases and revitalizing the human body. The five stages (*Karmas*) of *Panchakarma* 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 procedures. Since these plants inherently possess specific therapeutic properties, the quantity and composition of the specific medicinal plant to be used for an individual is determined by his body constitution and the specific diseases to be cured.

**Keywords:** Panchakarma, Snehan, Swedan, Nasya, Vaman, Virechan, Vasti, Medicinal plants

**IPC Int. Cl.<sup>8</sup>:** A61K36/00, A61P1/02, A61P11/00, A61P11/04, A61P29/00, A61P31/02

*Ayurveda* is commonly known as the science of longevity and it is the oldest available method of treatment in India. Its main aim is the preservation of health for normal persons and treatment of sick individuals using only natural methods. Three *doshas* of the body, *Vata*, *Pitta* and *Kapha*, which broadly represent the nervous system, the metabolic system and the nutritive system, keep the human body in balance. Whenever the delicate balance between these *doshas* is disturbed, a disease may be manifested. The main objective of the *Ayurvedic* system of treatment is to restore the original state of equilibrium between the *doshas*<sup>1,2</sup>. *Panchakarma* is essentially a cleansing process that not only treats diseases but also improves the overall health and helps to achieve longevity and holistic rejuvenation. It has been utilized since thousands of years as a technique of staying young & healthy, and maintaining vitality. As per the ancient *Ayurvedic* textbook *Charak Samhita*, *Panchakarma* is a five-fold therapy which can be used for preventive, curative and rejuvenatory purposes. These five main *Karmas* are *Vaman* (therapeutic emesis), *Virechan* (purgation), *Anuvasan Vasti* (enema using medicated oil), *Asthapan Vasti* (enema using medicated decoction) & *Shirovirechan* (nasal administration of medicines). The specific use of each of these *Karmas* on an

individual subject depends on the specific disease afflicting him and the constitution of the patient<sup>1</sup>.

The uniqueness of *Panchakarma* lies in the fact that it offers a systematic treatment for dislodging and flushing toxins from every cell using the same organs of elimination that the body naturally employs – the sweat glands, the blood vessels, the urinary tract and the intestines. It is unlike any other detoxification programme because it is fundamentally designed to remove a specific form of toxin. *Panchakarma* especially addresses a biological toxin called *Ama*. *Ama* is the by-product of inadequate digestion and metabolism resulting from poor digestive strength, improper food habits and other life-style aberrations. *Ama* is characterized by its stickiness and heaviness. Inside our bodies, it clogs our systems and damages our tissues. The process of *Panchakarma* removes *Ama* and clears the way for the body to re-establish an internal state of balance and harmony<sup>3</sup>. This process is especially beneficial in the treatment of cough, body ache, headache, running nose, paralysis, arthritis, nervous diseases, indigestion, irregular bowel movements and skin diseases.

The complete process of *Panchakarma* consists of three steps. The first step is the *Poorva Karma*, which is the preparatory procedure required before the main procedure. The next step is the *Pradhan Karma* or the main procedure, which is followed by the *Paschaat*

\*Corresponding author

Table 1— Properties and actions of some medicinal plants used during *Snehan Karma*

Common name	Plant name/Family	Chemical compounds	Ayurvedic indication
<i>Yasthimadhu</i>	<i>Glycyrrhiza glabra</i> Linn. Leguminosae	Glycyrrhizine, glucoside, quercetin, liqcoumarin, biflavones, glycyrrhic acid	Antimicrobial, hypotensive, hepatoprotective, antiviral, antiexudatic, antiulcer, antipyretic, antioxidant, antiinflammatory.
<i>Guduchi</i>	<i>Tinospora cordifolia</i> Willd Menispermaceae	Tinosporin, tinosporide, $\beta$ -sitosterol, cordifol	Hypoglycemic, antibacterial, antiallergic, antipyretic, analgesic, immunostimulant, antioxidant, antistress, hepatoprotective.
<i>Shalaparni</i>	<i>Desmodium gangeticum</i> DCLeguminosae	Gangetin, desmodin, hypaphorine, isoflavonoids	Antiinflammatory, analgesic, antiarthritic, antipyretic, bronchial muscle relaxant, spasmolytic.
<i>Neem</i>	<i>Azadiracta indica</i> A. JussMeliaceae	$\beta$ -sitosterol, nimbin, azadirone, azadirachtin, triterpenoids	Anti-bacterial, antimalarial, antiinflammatory, antipyretic, antiulcer, anthelmintic
<i>Sarson</i>	<i>Brassica campestris</i> Linn. Cruciferae	Sinalbin, sinapin, myrosin, potassium, magnesium, fixed oil	Oleation, analgesic, appetizer, antileprotic, beneficial for skin.
<i>Til</i>	<i>Sesamum indicum</i> Linn. Pediliaceae	Sessamin, sessamalin, vitamin A, B, C, fixed oil, phenol compounds	Analgesic, tonic, anticolic.
<i>Karanj</i>	<i>Pongamia pinnata</i> PierreLeguminosae	Karanjin, pongamol, fixed oil, quercetin	Purgative, antileprotic, antiitching, blood purifier, anticough.
<i>Erand</i>	<i>Ricinus communis</i> Linn.Euphorbiaceae	Ricin, fixed oil, fiber, amylase	Analgesic, purgative, antifolic, antileprotic, anthelmintic.
<i>Priyal</i>	<i>Buchanania lanzan</i> SprengAnacardiaceae	Fixed oils, tannin, starch	Oleation, antileprotic, nervine tonic, antiurticaria, anticough.

*Karma* or the post-therapy dietary regimen to restore the body's digestive and absorptive capacity to its normal state. *Paschaat Karma* consists of the *Rasayan* and *Vajikaran* processes<sup>4,5</sup>.

#### **Poorva Karma (pre-operative treatment)**

Before starting the main procedure of *Panchakarma*, the patient is prepared to enable him to receive the full benefits of the main treatment. This preparatory treatment is called *Poorva Karma* (pre-operative treatment). It consists of two main processes – *Snehan* (oleation) and *Swedan* (fomentation). These methods help to dislodge the accumulated poisonous substances in the body, thus preparing them for their complete removal.

#### **Snehan (oleation)**

The use of medicated oils, either internally or externally, is called *Snehan* (oleation). *Snehan* refers to the administration of medicated fats or the massage of oil over the skin for a specific period. A number of methods of *Snehan* therapy have been 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 is undesirable and unwarranted. *Snehan* is performed using substances of vegetable origin such as *Til*, *Erand*, *Mahua*, *Sarson*, *Neem*, *Karanj*, *Shaijan*, *Priyal* and *Bahera*, as well as

substances of animal origin such as milk, curd, Ghee, meat, fat and bone tissue. The use of a specific *snehan* substance also depends upon the season of treatment. Therefore, while the use of *Ghee* has been recommended during the fall season, oil is the preferred substance during winters and the use of fat and bone marrow has been recommended during the spring season. Some important medicinal plants used during *Snehan* have been listed (Table 1)<sup>6-9</sup>.

#### **Swedan (fomentation)**

During *Swedan*, the body is made to perspire by the application of heat in order to loosen and excrete the toxins. *Swedan* 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 (*Sagini*) or indirectly (*Niragini*). *Swedan* liquefies the *doshas*, clears the obstruction in the channels of circulation and directs the *doshas* to selective places from where they can be expelled easily. Specific plants decided on the basis of nature and intensity of *doshas* are fused into the steam and the combined action of the heat and the herbs dilate the channels of the body allowing the stored toxins to move back into the digestive system. The use of fomentation relieves stiffness, heaviness & cold in the patient. Some of the common techniques of thermal sudation (*Sagini*) are mixed fomentation, hot bed sudation, steam kettle, bathtub sudation,

Table 2—Properties and actions of some medicinal plants used during *Swedan Karma*

Common name	Plant name/Family	Chemical compounds	Ayurvedic indication
<i>Shobhanjan</i>	<i>Moringa oleifera</i> Lam. Moringaceae	Moringines, vanillin, flavonoids, carotene, pterygospremin	Antibacterial, antifungal, hepatoprotective, antibiotic, anticancer, antiinflammatory.
<i>Arka</i>	<i>Calotropis procera</i> R. Br. Asclepiadaceae	Calotropin, uscharin, calotoxin, $\beta$ -sitosterol	Antimicrobial, anticancer, anthelmintic, fibrinolytic.
<i>Punarnava</i>	<i>Boerhavia diffusa</i> Linn. Nyctaginaceae	Punarnavoside, rotenoids, flavons, sterols, boeravine	Diuretic, antiinflammatory, antibacterial, antihypertensive, hepatoprotective.
<i>Vatsanabh</i>	<i>Aconitum ferox</i> WallRanunculaceae	Aconitine, benzyl aconine pseudoaconitine	Diaphoretic, diuretic, antiinflammatory, analgesic, antipyretic.

Table 3— Properties and actions of some medicinal plants used during *Vaman Karma*

Common name	Plant name/Family	Chemical compounds	Ayurvedic indication
<i>Madanphal</i>	<i>Randia dumetorum</i> Lam. Rubiaceae	Mannitol, randialic acid, saponin, saponin	Antiinflammatory, antipyretic, anticancer, hypotensive, insecticidal, cardiac stimulant, antimicrobial.
<i>Indrajava</i>	<i>Holarrhena antidysenterica</i> Linn. Apocynaceae	Conessine, holacetine, kurchessine, hlarrhesmine	Antiprotozoal, antiamebiac, antidiarrhoeal, antiangiostatic, antispasmodic.
<i>Gokshur</i>	<i>Tribulus terrestris</i> Linn. Zygophyllaceae	Saponin, rutin, dioscin, $\beta$ -sitosterol, quercetin, diosgenin	Diuretic, antibacterial, antiurolithiatic, analgesic, hepatoprotective.
<i>Patha</i>	<i>Cissemelos pareira</i> Linn. Menispermaceae	Hayatine, cissampeline, hayatinine	Antitumour, hypoglycaemic, anti-leukaemic, muscle relaxant.
<i>Gunja</i>	<i>Abrus precatorious</i> Linn. Leguminosae	Abrin A B C, abralin, glycyrrhizin, trigonelline	Analgesic, abortifacient, antimicrobial, antifertility.
<i>Neem</i>	<i>Azadirachta indica</i> A. Juss Meliaceae	$\beta$ -Sitosterol, nimbin, triterpenoids, azadirachtin, azadirone	Antibacterial, antimalarial, antiinflammatory, antiulcer, antipyretic, anthelmintic
<i>Sahijan</i>	<i>Moringa oleifera</i> Lam. Moringaceae	Moringines, vanillin, flavonoids, carotene, pterygospremin	Antibacterial, antifungal, hepatoprotective, antibiotic, anticancer, antiinflammatory.
<i>Yashthimadhu</i>	<i>Glycyrrhiza glabra</i> Linn. Leguminosae	Glycyrrhizine, glucoside, quercetin, liqoumarin, biflavones, glycyrrhic acid	Antimicrobial, hypotensive, hepatoprotective, antiulcer, antiexudatic, antiviral, antipyretic, antioxidant, antiinflammatory.
<i>Arka</i>	<i>Calotropis procera</i> R. Br. Asclepiadaceae	Calotropin, Uscharin, Calotoxin, $\beta$ -sitosterol	Antimicrobial, anticancer, anthelmintic, fibrinolytic.
<i>Peepul</i>	<i>Piper longum</i> Linn. Piperaceae	Piperine, piparbin, sesamin, piper longumine	Anti-bacterial, antispasmodic, hypoglycaemic, antiinflammatory.
<i>Chitrak</i>	<i>Plumbago zeyalanica</i> Linn. Plumbaginaceae	Plumbagin, plumbagic acid, $\beta$ -sitosterol, tannin,	Appetizer, anti-fertility, hepato-protective, anti-bacterial.
<i>Daruharidra</i>	<i>Berberis aristata</i> DC Berberidaceae	Berberine, oxycanthine, oxyberberine	Antiinflammatory, antipyretic, anti-protozoal, hypoglycaemic.
<i>Shatavari</i>	<i>Asparagus racemosus</i> Linn. Liliaceae	Saponin, shatavarin, sarsapogenin, quercetin	Antioxytocic, galactagogue, antiviral, diuretic.
<i>Madhuka</i>	<i>Madhuca indica</i> Gmel Sapotaceae	Anthrocyanin, mallic acid, histidine, thiamine	Analgesic, oleation, tonic, diuretic, galactagogue.
<i>Haridra</i>	<i>Curcuma longa</i> Linn. Zingiberaceae	Curcumin, curcuminoids, phyto-sterols, dihydrocurcumin	Antiinflammatory, antifungal, antihistaminic, insecticidal, hypocholesteremic.
<i>Kovidar</i>	<i>Bauhinia variegata</i> Linn. Leguminosae	Tannin, fixed oils	Astringent, antiseptic, antiinflammatory, emetic.

sudatorium, stone bed sudation, trench sudation, cabin sudation, ground bed sudation, pitcher bed sudation and pit sudation. Similarly, non-thermal sudation (*Niragini*) can be provided by means of exercise, warm

room, heavy clothing, hunger, excessive drinking, fear, anger, plaster or sunshine. Many medicinal plants used during the process of *Swedan Karma* possess valuable therapeutic properties (Table 2)<sup>6-9</sup>.

**Pradhan Karma (main treatment)**

The main process of *Panchakarma* is taken up after completing the pre-operative treatment. The main treatment is divided into five *karmas*.

**Vaman Karma**

After the *doshas* are brought back into the stomach as a result of the pre-treatment, specific medicines in different forms are administered to induce emesis therapy, expelling the morbid *doshas* through the oral passage. This process of therapeutic vomiting is called *vaman Karma*. This is usually administered when cough is the major culprit and needs to be expelled from the body. However, because of its therapeutic effect, it is also recommended for normal persons in the spring season. Effective *vaman Karma* is usually indicated by 4–8 expulsions during emesis therapy. Table 3 lists the properties and actions of some medicinal plants commonly used during *vaman Karma*<sup>6-9</sup>.

**Virechan Karma**

The process of elimination of *Doshas*, especially *Pitta Dosh*, by inducing purgation is known as *Virechan Karma*. It is most suitable to alleviate the diseases caused by *Pitta*. The intensity of purgation to be used depends on the body constitution and disease of the patient. The medicinal drugs are orally administered either as a powder, decoction or paste. The specific dosage depends on the patient's condition and the form of administered medicine. Effective *Virechan Karma* is usually indicated by 10–30 expulsions during emesis therapy<sup>1,3</sup>. The therapeutic actions and properties of some medicinal plants frequently used in *Virechan Karma* have been laid down (Table 4)<sup>6-9</sup>.

**Anuvasana Vasti Karma (enema using medicated oils)**

*Anuvasana Vasti Karma* is a type of enema, which refers to the process of elimination of *Doshas* from anus, although the site of action is stated to be the large intestine. *Vata* is the most important of the three *doshas* as most of the diseases are caused by its disturbance. *Anuvasana Vasti Karma* is the best treatment for diseases caused by disturbance of *Vata dosha*. In general, the route of administration here is the anus, although it may be the urethral orifice, vagina and wounds also<sup>1, 2</sup>. In *Anuvasana Vasti Karma*, oleous substances consisting of medicated oils are administered to the patient in the process of enema. The specific herbal plant parts to be used and their composition in the medicated oil prepared using an oily base depends on the patient's constitution and his disease. The frequency of enemas to be administered also depends on the predominance of *Doshas*. The symptoms of optimum purification in this procedure include evacuation of stool, urine & flatulence, lightness in body, increased appetite, taste in meals and increased strength. After the *Anuvasana Vasti Karma*, the patient is advised to take warm water, light diet and adequate rest. He is also advised to avoid sitting & standing posture for long durations, excessive talking, day sleep, anxiety and sunlight. *Anuvasana Vasti Karma* is especially recommended in case of diseases caused by disturbance of *Vata Doshas* especially when it is obstructed in the channels, e.g. pain in the abdomen, chest and pelvic region. It has also been found very useful for patients suffering from paralysis, hemiplegia, constipation, joint diseases, difficulty in urination, stiffness in back and hips and loss of strength in body.

Table 4— Properties and actions of some medicinal plants used during *Virechan Karma*

Common name	Plant name/Family	Chemical compounds	Ayurvedic indication
<i>Trivrita</i>	<i>Operculina turpethum</i> Linn. Convolvulaceae	Turpethin, luteolin, saponin	Antiinflammatory, antibacterial, anthelmintic.
<i>Vidanga</i>	<i>Embelia ribes</i> Burm. Myrsinaceae	Embelin, homoembellin quercitol, christembine,	Anthelmintic, antileprotic, digestive, anticolic, carminative
<i>Danti</i>	<i>Baliospermum montanum</i> Muell-Arg. Euphorbiaceae	Montanin, baliospermin	Purgative, hypotensive, antileukaemic
<i>Ghrit kumari</i>	<i>Aloe vera</i> Linn. Liliaceae	Barbaloin, emodin, alaoiin, chrysofenol	Antiulcerogenic, antispasmodic, hepatoprotective, antiprostaglandin, antiinflammatory.
<i>Haritaki</i>	<i>Terminalia chebula</i> Retz. Combretaceae	Chebulinic acid, tannin, tannic acid, anthraquinone	Antimicrobial, purgative, anti-spasmodic, antistress, hypolipidimic, anthelmintic.
<i>Amlaki</i>	<i>Emblica officinale</i> Gaertn. Euphorbiaceae	Ellagic acid, polyphenols, vitamin C, phyllembin, phyllembic acid, carotene	Antiulcer, antioxidant, immunomodulator, antimicrobial, hypolipidimic
<i>Vibhitaki</i>	<i>Terminalia bellirica</i> Roxb. Combretaceae	Ellagic acid, tannin, $\beta$ -sitosterol, chebulagic acid, gallic acid	Purgative, antihistaminic, antimicrobial, antiasthmatic
<i>Gambhari</i>	<i>Gmelina arborea</i> Linn. Verbenaceae	Gmelinol, $\beta$ -sitosterol, sesquiterpene	Antiviral, hypoglycaemic, antiinflammatory.

Table 5— Some medicinal plants used during *Anuvasan & Aasthapan Karma*

Common name	Plant name/Family	Chemical compounds	Ayurvedic indication
<i>Jeevanti</i>	<i>Leptadenia reticulata</i> W. & A. Asclepiadaceae	Stigmasterol, flavones, quercetin, fructosan	Lactogenic, anti-bacterial, hypertensive, vasodilator.
<i>Bhuiamlaki</i>	<i>Phyllanthus urinaria</i> Linn. Euphorbiaceae	Phyllinirunine, $\beta$ -sitosterol, gallic acid	Hepatoprotective, antiviral, antifungal, antispasmodic.
<i>Atibala</i>	<i>Abutilon indicum</i> Linn. Malvaceae	Flavones, cyanidine, $\beta$ - sitosterol	Antifungal, antibacterial, immunomodulator analgesic,
<i>Aama</i>	<i>Mangifera indica</i> Linn. Anacardaceae	Mangiferin, gallic acid, quercetin, $\beta$ -sitosterol	Cardiotonic, antioxidant, diuretic, antifungal.
<i>Mandukparni</i>	<i>Centella asiatica</i> Linn. Umbelliferae	Asiaticoside, hydrocotilin, brahmoside, saponin	Sedative, hepatoprotective, antispasmodic.
<i>Khadir</i>	<i>Acacia catechu</i> Willd. Leguminosae	Catechin, catechutannic acid, taxifolin, epicatecin	Antiviral, antifungal, hypoglycaemic.
<i>Mustak</i>	<i>Cyperus rotundus</i> Linn. Cyperaceae	Cineol, cyperenone, pinene, cyperene	Antipyretic, antimicrobial, antiinflammatory.
<i>Udumbar</i>	<i>Ficus racemosa</i> Linn. Moraceae	Stigmasterol, $\beta$ -sitosterol, triterpene	Hypoglycaemic, antidiarrhoeal, antiinflammatory, hepatoprotective.
<i>Bakuchi</i>	<i>Psoralea corylifolia</i> Linn. Leguminosae	Psoralen, raffinose, isopsoralen	Antibacterial, skin photosensitizing, antistaphylococcal.
<i>Dhataki</i>	<i>Woodfordia fruticosa</i> Kurz. Lythraceae	Glucosides, tannin, woodfordin	Antipyretic, antiviral, antifungal.
<i>Bharangi</i>	<i>Clerodendrum serratum</i> Linn. Verbenaceae	Saponin, arabinose, serratagenic acid, phytosterols	Hypotensive, antiallergic, antihistamine, antibacterial
<i>Jamra</i>	<i>Syzygium cumini</i> Linn. Myrtaceae	Betulonic acid, Tannin, Quercetin, Kaemerol	Hypoglycaemic, antiinflammatory, antidiarrhoeal, antipyretic.
<i>Vata</i>	<i>Ficus bengalensis</i> Linn. Moraceae	Flavonoids, quercetin, anthocyanins $\beta$ -sitosterol,	Antioxidant, antifertility, antidiabetic, hypocholesthimic.
<i>Sirish</i>	<i>Albizia lebeck</i> Benth. Leguminosae	Melanoxetin, okanin, albizziagenin, flavonoids, triterpenes,	Hypoglycaemic, antiallergic, analgesic, abortifacient, antiprotozoal.
<i>Guggul</i>	<i>Commiphora mukul</i> Hook Bursenaceae	Quercetin, guggulsteral, $\beta$ - sterol, diterpenoids	Hypolipidaemic, antiinflammatory, antiarthritic, antirheumatic, hypocholesteremic.
<i>Nagakeshar</i>	<i>Mesua ferrea</i> Linn. Guttiferae	Mesuaferone A & B, $\beta$ - sitosterol, mesuol, gutiferal	Antimicrobial, antiasthmatic, antispasmodic, hypotensive.
<i>Sariva</i>	<i>Hemidesmus indicus</i> R. Br. Asclepiadaceae	Triterpenes, saponin, tannin, glycosides, rutin	Bacteriostatic, anticancer, antiinflammatory, antifungal, antibacterial, hypotensive.
<i>Bilva</i>	<i>Aegle marmelos</i> Corr. Rutaceae	Marmelosin, tannic acid, marmelin	Hypoglycaemic, analgesic, antidiarrhoeal, cardiac stimulant, anthelmintic, antipyretic.
<i>Indrajav</i>	<i>Holarrhena antidysentrica</i> Linn. Apocynaceae	Conessine, kurchiline, kurehessine, holarrhesmina	Antidiarrhoeal, antispasmodic, antiprotozoal, hypoglycaemic.
<i>Shyonak</i>	<i>Oroxylum indicum</i> Vent. Bignoniaceae	Oroxylum, baicalein, glycosides,	Diuretic, antiinflammatory, antifungal, spasmogenic.

***Asthapana Vasti Karma* (enema using medicated decoction)**

*Asthapana Vasti Karma* is another type of enema, which is characterized by the use of medicated decoctions in the process of *Vasti*. These medicated decoctions are prepared using specific parts of medicinal plants decocted with an aqueous base. No oleous substances such as oils, ghee, fats, etc are used in their preparation. *Asthapana Vasti Karma* is also administered though the lower body parts just like *Anuvasana Vasti Karma*. However, while *Anuvasana Vasti Karma* can be administered on a daily basis, *Asthapana Vasti Karma* is used for treatment of a specific disease. The dosage of medicated oil is around 120 ml in case of *Anuvasana Vasti Karma*

whereas around 480 ml of decoction is used in *Asthapana Vasti Karma*. The therapeutic actions of some common plants used during *Anuvasana* and *Asthapana Vasti Karmas* have been listed (Table 5)<sup>6-9</sup>.

***Shirovirechan* or *Nasya Karma***

*Shirovirechan* or *Nasya* is usually the last step of treatment in the main process of *Panchakarma*. It refers to the process of instillation of different herbs, medicated oils or ghee through the nose in a certain quantity for a given number of days in order to remove and balance the aggravated *Doshas* from the upper body, especially the head, nose and throat. All drugs and measures introduced through the nose spread

Table 6— Some medicinal plants used during *Shirovirechan Karma*

Common name	Plant name/Family	Chemical compounds	Ayurvedic indication
<i>Vacha</i>	<i>Acorus calamus</i> Linn. Araceae	Asarone, acorin, eugenol, calameone, calameon	Analgesic, anticonvulsant, sedative, antimicrobial, hypothermic, hypotensive.
<i>Elaichi</i>	<i>Elettaria cardamomum</i> Maton Zingiberaceae	Cardamonin, terpineol, flavanone, alpinentin, chalcone, pinene	Hypoglycaemic.
<i>Tulsi</i>	<i>Ocimum sanctum</i> Linn. Labiatae	$\beta$ -carotene, apigenin, saponin, glucuronide	Antiasthmatic, antistress, antiinflammatory, antioxidant, hyperglycaemic, immunostimulator.
<i>Jyotismati</i>	<i>Celastrus paniculatus</i> Willd. Celastraceae	Benzoic acid, calastrine, paniculatin, $\beta$ -sitosterol, fatty acids	Sedative, anticonvulsant, hypotensive, hypolipidemic, antiulcerogenic.
<i>Apamarg</i>	<i>Achyranthus aspera</i> Linn. Amaranthaceae	Ecdysone, saponin, oleanolic acid, achyranthine	Hypoglycoenic, antibiotic, vasodilator, antifungal, cardiac stimulant.
<i>Aparajita</i>	<i>Clitoria ternatea</i> Linn. Leguminosae	Taraxerol, taraxerone, anthocyanin, aparajitin, clitorin	Insecticidal, diuretic, antioxytotic, analgesic, purgative.

throughout the head and affect the *Doshas* and diseases situated there. It is an important procedure for the treatment of *Shiro Rogas* or the diseases affecting the head areas. This special form of cleansing is applied to the sinuses to expel the foreign matter that has gathered in the nose or the para-nasal sinuses<sup>3,4</sup>. The various herbal medicines used here are administered as oils, pastes, powders, plant juices, decoctions or fumes. These are obtained from the various specific plant parts such as fruits, leaves, roots, fruits, etc of these herbs. In a healthy person, *Nasya* should be given according to the season of treatment. During winter, noon is the best time for *Nasya*, while mornings are preferable during the spring season. Similarly, evenings are recommended during the summer season. About 4–8 drops are usually administered during this procedure. The administration of medicines should be followed up with mild fomentation on forehead, face & neck. The patients should be asked to gargle with hot water and given light food.

*Shirovirechan* is especially beneficial in case of diseases of the head & neck e.g., headache, stiffness in head, neck & shoulders, facial paralysis, epilepsy, diseases of sense organs, sinusitis, hysteria, etc. It is contra-indicated in case of extreme thirst, extreme hunger, post-exercise, pregnancy, menstruation, bleeding disorders, fasting, anger or grief. Effective *Nasya* treatment is indicated by lightness in head & body, good sleep, proper functioning of sense organs & mind and elimination of vitiated *doshas* from nasal sinus and nose. The properties and actions of some medicinal plants utilized in *Shirovirechan* are described (Table 6)<sup>6</sup>

#### **Paschat Karma (post-operative procedure)**

After undergoing the main procedure of the *Panchakarma*, the body is cleared of both toxins and *Ama*. Now the internal energy of the body,

which has decreased during the procedure, can be re-built. The patient is given liquids first, followed by semi-solids before finally receiving a normal diet. After restoring the powers of digestion, the patient is given specific Ayurvedic medicines for treatment of his specific disease. The re-building process strengthens the digestive system and the immune system and entails taking additional special foods and herbs. These herbs are designed to enhance the strength of immune system and are revered for extending life.

#### **Conclusion**

After receiving *Panchakarma*, the mind is light and clear, the body is pure and the energy level is high. Properly performed *Panchakarma* results in curing of the disease, augmentation of general metabolism, promotion of strength and bulk, pleasantness of senses, improvement of mental and intellectual faculties resulting in delayed ageing and healthful longevity. Healthy persons are also advised to go for *Panchakarma* once a year or every two years to maintain their health. *Panchakarma* has no adverse side effects. It is very effective for healing diseases of nervous system, skin disease, obesity, high blood pressure, rheumatism, liver disease, respiratory disease, etc. The medicinal plants described here play a very useful role at various stages of the *Panchakarma* process. Their inherent therapeutic properties are fully manifested and utilized during this systematic process, resulting in the desired beneficial effects upon the patient. Since the specific actions of these herbs are now well-known, the particular combination of these herbs to be used at any stage of the *Panchakarma* process can be customized for each patient depending on his specific diseases, body constitution, etc.

**Acknowledgement**

Authors are thankful to Professor PK Debnath & Dr TK Biswas for extending their kind help in the preparation of this manuscript.

**References**

- 1 Shastri SN, *Charak Samhita- Siddhi Sthanam*, (Chaukhamba Bharati Academy, Varanasi), 2, 1989, 960-966.
- 2 Ranade S & Lele A, Panchakarma and Ayurvedic massage, (Chaukhamba Sanskrit Pratishthan, New Delhi), 1, 1998, 85-101.
- 3 Ojha D & Kumar A, *Panchakarma-Therapy in Ayurveda*, 2<sup>nd</sup> Edition, (Chaukhamba Amar Bharati Prakashan, Varanasi), 6, 1993, 15-40.
- 4 Ghanekar SG, *Susruta Samhita- Nidana Sthanam*, 5<sup>th</sup> Edition, (Motilal Banarasi Das, Delhi), 1, 1994, 505-557.
- 5 Shastri SN, *Charak Samhita-Sutra Sthanam*, (Chaukhamba Bharati Academy, Varanasi), 1, 1988, 85-86, 255-318.
- 6 Rastogi RP & Mehrotra BN, *Compendium of Indian Medicinal Plants*, Vol II, (Central Drug Research Institute, Lucknow), 1993.
- 7 Sharma PV, *Dravyaguna Vijnan*, Vol II, (Chaukhamba Bharati Academy, Varanasi), 1995.
- 8 Sharma PC, Yelne MB & Dennis TJ, Database on medicinal plants used in Ayurveda, (Central Council for Research in Ayurveda and Siddha, New Delhi), 1, 2000, 216-224.
- 9 Chatterjee A, Pakrashi SC, *The Treatise of Indian Medicinal & Plants*, (National Institute of Science Communication, New Delhi), Vol 1-4, 1997.