



Review Article

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A REVIEW ON UPANAHA: AN AYURVEDIC TOPICAL APPLICATION

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ABSTRACT

Ayurveda, the traditional medicine of India has emphasised on various modalities of treatments. This includes both the internal and external treatments explained for different diseases. Upanaha, poultice application is one of the treatments described in the management of inflammatory swelling. Pain medicine is one of the emerging areas of research and development. Upanaha is proved effective in the management of pain and other conditions where external treatment is employed. An attempt has been made to collect references about upanaha from the classics of Ayurveda and reviewed systematically.

Key words: Upanaha, topical application, transdermal application.

INTRODUCTION

The treatment modality in Ayurveda which understands the human being and the disease in him in a holistic perspective are rationally designed in three categories:

Satvaavajaya- Controlling the mind/Stress Management/taking the patient into confidence, Daiva Vyapaashraya- Destiny or time; Yukti Vyapaashraya: The Physician's planning and execution of the treatment in the given context; Yukti Vyapaashraya further includes planning of: Systemic medicines (Anthah Parimarjana); Topical or External Therapies (Bahir Parimarjana) and Surgical Intervention (Shastra Pranidhana).

Antah parimarjana (systemic medicines) includes all the internal medications, Bahir Parimarjana topical/external therapies includes therapies like abhyanga (massage), swedana (sudation), parisheka (pouring decoction of herbs over a local area/whole body) using twak (skin) as the route of administration of medicament; and Shastra pranidhana (surgical intervention that includes surgical procedures like chedana (cutting), seevya (suturing), Jalaukavacharana (application of leech), agni (cautery), kshara (alkali)¹.

Upanaha (Application of poultice) is a local treatment where in a combination of Churnas (powdered herbs) are made into paste using sneha dravya (unctuous materials -oil/ghee/muscle fat/marrow), kinva (fermented liquid), made hot and applied over the required site. This is meant to reduce the local inflammation of the site and also to act as a topical/local analgesic.

Due to the increased awareness of side effects of NSAIDs and analgesics, use of natural remedies especially topical applications are being explored due to their relative safety². Topical agents in the form of creams, ointments, gels, lotions, solutions, pastes, and sprays are widely used in practice since ages due to their instant action. Traditionally used Topical

analgesic agents include various NSAIDs, capsaicin, local anaesthetics (e.g., lidocaine), rubefacients or counterirritants (e.g., menthol, camphor, others), and herbal products (e.g., arnica, comfrey and others) which are used in routine practice as an alternative to combat many acute and chronic painful conditions.

Etymology and Definition

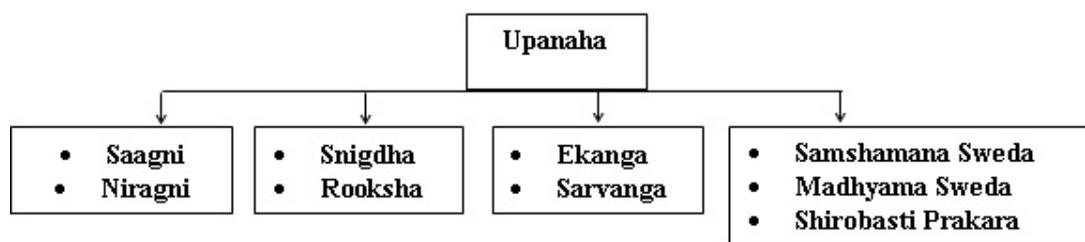
The word 'Upanaha' is split as upa+ nah, in which upa is upasarga (prefix) which means near, nah bandhane means to tie or bind³. The other meanings of upanaha are bandage^{3, 5}, bandage with warm paste of medicaments^{3, 4}, bandage using charma (leather) or pata (cloth)^{1, 5}, bandage applied for vranapaka (suppuration of wound)³. Most of the classical texts have considered Upanaha as bandhana (tying) and lepa (application) (Table 1).

Three perspectives of Upanaha is perceived by Sushruta in different contexts, viz.

- 1) Saptopakrama (seven folds of treatment for inflammatory swellings)³- for the purpose of converting **amashopha** (non-suppurative stage of inflammatory swelling) into **pakvashopha** (suppurative stage of inflammatory swelling),
- 2) Shashtiupakrama³ (sixty folds of treatment for different types of ulcer) amashopha gets regressed with upanaha and the kinchit pakva shopha (slightly suppurated inflammatory swelling) will become pakva depending on the condition (completely suppurated),
- 3) A type of Swedana³ (fomentation) - which is sub-classified into two: **sagni upanaha** (Application of drugs after heating) and **niragni upanaha** (application of drugs with hot potency without heating).

Types of Upanaha

- 1) Sagni Upanaha, where the drugs are heated first and then applied.
- 2) Niragni Upanaha, where Ushna Veerya Dravya (drugs with hot potency) are applied without heating.



Charaka unambiguously considered upanaha as niragni sweda (sudation without heat) ¹. Arunadatta also classified Upanaha into two categories: **Sagni- sankara sweda** (fomentation using heated bundle of drugs) done by using Kola (*Zizyphus jujube* Linn.), Kulattha (*Dolichos biflorus* Linn.), Suradaru (*Cedrus deodara* Roxb.), Rasna (*Pluchea lanceolata* DC) etc drugs explained in Aragvadheeya gana ³ and Anagni- By creating Shareeroshmavarodha (retaining the internal heat within the body) by external force (wrapping a thick cloth/ soft leather/ applying) ⁴.

Materials used for Upanaha

The materials are classified based on the source

- 1) Plant source—various herbs and different parts of the plant are used and selection of plants depends on the disease and dosha involved. Leaves and roots are commonly used.
- 2) Food materials—Godhuma (*Triticum aestivum* Linn.), yava (*Altingia excelsa* Noronha.), masha (*Phaseolus radiatus* Linn.) and their preparations like payasa, krushara, fermented gruel (amla pishta), veshavara (a meat preparation) are included in the group of food materials;
- 3) Animal source—Ghee, milk, curd, excreta of donkey, horse, cow, etc.

Various Acharyas have mentioned specific combination of drugs based on the dominance of dosha.

Acharya	Dosha	Materials used
Charaka ¹	Kevala vata (conditions dominated by vata dosha alone)	Godhuma, yava with sneha and kinva
	Pittanugata vata (conditions of vata associated with pitta)	sugandhi dravya like chandana (<i>Santalum alba</i> Linn.), agaru, patra (<i>Abies webbiana</i> Lindl.) etc. added with surakitta, shatapushpa and jeevanthi (<i>Lepatadania reticulata</i> Linn.).
	Kaphanugata vata (conditions of vata associated with kapha)	Kushta, taila, atasi
Sushruta ³	Kevala Vata (conditions dominated by vata dosha alone)	Vatahara dravyas (herbs pacifying vata) made into paste with kanji (fermented gruel) and lavana (rock salt); Krishara, Paayasa, Utkarika (food preparations), Veshavara (meat preparation) and salvana upanaha.
	Pittanugata vata (conditions of vata associated with pitta)	Kakolyadi, Eladi and Surasadi gana dravyas
	Kaphanugata vata (conditions of vata associated with kapha)	Tila (<i>Sesamum indicum</i> Linn.), Atasi (<i>Linum usitatissimum</i> Linn.), Sarshapa kalka (paste of <i>Brassica campestris</i> Linn.)
Laghu Vagbhata ⁵	Kevala vata (conditions dominated by vata dosha alone)	Vacha (<i>Acorus calamus</i> Linn.), kinva (fermented product), shatahva (<i>Foeniculum vulgare</i> Gaertn), devadaru (<i>Cedrus deodara</i> Roxb.); dhanyas (food grains) like tila, masha etc; gandha dravyas (aromatic drugs) like kushta (<i>Saussurea lappa</i> C.B.CL), agaru (<i>Aquillaria agollacha</i> Roxb.), tagara (<i>Valeriana hardwickie</i> Wall.), surasa (<i>Ocimum santum</i> Linn.); erandamula (roots of <i>Ricinus communis</i> Linn.), eranda (<i>Ricinus communis</i> Linn), rasna (<i>Alpinia galangal</i> Linn.), mamsa (flesh of animals/birds), sneha dravya (unctuous materials), lavana (rock salt), takra (butter milk), chukra (<i>Garcinia indica</i> Linn.), ksheera (milk).
	Pittanugata vata (conditions of vata associated with pitta)	Padmakadi gana dravya
	Kaphanugata vata	Surasadi gana dravya

Sushruta also mentions about salvana upanaha in vatavyadhi chikitsa, in which the quantity of lavana is comparatively more. In Kaphanugata Vata with—Surasadigana dravyas.

Method of application

The lepa should be applied against the direction of hair follicles. Lepa thus applied facilitates easy absorption of the drug through the roma koopa and stays for long duration ³. The thickness of lepa application on the skin should be equal to the thickness of the buffalo skin (Ardra Mahisha Charma). The thickness of the fresh buffalo skin before tanning is in the range of 2.8 to 3.2 mm thick ³. The special advantage of Upanaha is that it can be applied overnight. Due to the presence of Sneha Dravya,

Upanaha does not dry up and can be left on the body for a longer duration compared to other Lepas.

The different materials selected based on the disease and the patient condition are made into fine paste by grinding or crushing the fresh leaves all together with sufficient amount of hot water, veshavara, sneha (oil/ghee) etc..

After the application of Upanaha, either heated or otherwise, a Vatahara patra viz., Eranda is placed over the paste and done bandaged with a cotton cloth and secured firmly. The bandage should neither be loose nor very tight. Classical texts mention the use of charma (skin) of animals which are of ushna veerya

(hot potency), devoid of hair and free from fetid smell or kousheya (Silk), Aavika (Woolen) or shakata (Cotton Cloth) ^{1,5}.

Different indications of Upanaha with their references

Upanaha can be efficiently utilized in a large number of diseases where pain, swelling and restricted movements are seen.

Shotha	Su-Chi-1/23
Vrana	Su-Chi-2/23-24
Vrana Shotha	Chakrapani commentary on Su. Su.vrana shodhana-18/19
Daha and Shoola	Cha. Chi-25-79
Bhagna	Su-Chi-3/7
Vatavyadhi Chikitsa	Su-Chi-4/7
Vatajanya Vidradi	Su-Chi-16/45
Vatarbuda	Su-Chi-18/29
Kaphajanya Galaganda, in	Su-Chi-18/48
Kafaja Vruddhi	BR-10

Su- sushruta samhita; Chi- Chikitsa sthana; Cha- Charaka samhita, BR- Bhaishajya ratnavali

Susrutha opines that Upanaha Sveda is specifically indicated in case of *sankuchyamana* (Contractures), *Rujartha* (pain predominant condition), *Stabdha Gatra* (stiffness), but contraindicated in *PittaRaktaavarana* (obstruction to functioning of rakta by pitta)⁴.

DISCUSSION

Upanaha is the mode of treatment used to suppurate/regress an inflammatory swelling. The action of the upanaha depends on the materials used for the application, duration of retaining on the skin surface and thickness of the paste applied. Skin being the largest organ in human body, offers advantages compared to other routes of administration. Is the action of Upanaha similar to that of a topical agent or can it prove to be a transdermal drug delivery system is a matter that needs to be studied further.

The advantages of Transdermal Drug Delivery System are

1. Avoidance of hepatic first pass metabolism;
2. Avoidance of gastro intestinal incompatibility;
3. Predictable and extended duration activity;
4. Minimising undesirable side effects;
5. Provides utilization of drugs with short biological half-lives;
6. Narrow therapeutic window;
7. Improving physiological and pharmacological response;
8. Avoiding the fluctuations in drug levels;
9. Termination of therapy is easy at any point of time;
10. Greater patient compliance due to elimination of multiple dosing profile;
11. Ability to deliver drug more selectively to a specific site;
12. Provides **suitability for self-administration**

The penetration of drug through the tough, horny layer, stratum corneum is greatest challenge in the epidermal drug transport. Food materials like payasa, krushara, milk, dadhi, amla pishta, veshavara are *Snigdha* in action and used in *Sagni Upanaha*. The biocompatible and bio similar excipients like liposomes and micro emulsions can integrate with the lipids of the biological membrane, which can pass through the intercellular spaces of skin cells and helps in the delivery of the drug. The large sized colloidal carriers get adsorbed into the stratum corneum and release the drug by diffusion⁶. Studies have revealed that the lipid medium is highly suitable for penetration of the drug molecule through stratum corneum on this basis, it can be assumed that the oil used in *Nirgundipatra upanaha* serves as a lipoidal medium for penetration of drug molecules and exerts immediate anti-inflammatory effect⁷.The excreta of animals

being organic substances, they may act as good heat retainers, thus would enhance the process of fomentation and produce analgesic effect. The sour or fermented materials used in the upanaha application help to permeate the active principles from one surface (media) to another. In the present scenario, vinegar is used as fermented material instead of the conventional gruel. Most of the food materials which possess *madhura rasa* (Sweet taste) or *vatahara* (pacifying vata dosha) in action. Oil acts as heat barrier and also simultaneously facilitates absorption of drugs. It also prevents the Upanaha from drying up and causing skin irritation.

The *Tiryak Dhamani* (transverse arteries) understood as per Anatomy in Ayurveda (*sharira rachana*) divides into numerous branches and cover the body like a network and their openings are attached to hair follicles (*romakoopa*). Through them the potency (*Veerya*) of topical application (*alepa*), massage(*abhyanga*), poultice (*upanaha*), pouring decoctions over local area/whole body (*parisheka*), immersion of local area or whole body (*avagaha*), enter into the body after undergoing absorption (*paka*) through *Bhrajaka pitta* abided in skin.

Oral anti-inflammatory drugs bring about the therapeutic action by inhibiting/blocking the production of cyclo-oxygenase (COX) enzymes and prostaglandins, thus reducing the pain and inflammation. Topical applications also have similar therapeutic action, but produce the local effect. The exogenous opioid such as morphine applied on the skin act similar with the endogenous opioid, gets directly absorbed by the opioid receptors and causes an impact on the central nervous system^{8,9}. These local opioids acts as analgesia, but does not cause the untoward side effects like respiratory depression, dysphoria, sedation, nausea, or addiction and without the adverse effects of systemic or topical NSAIDs (eg, renal toxicity, gastric bleeding, cardiovascular effects). Hence these are advantageous in conditions with chronic pain like trauma, myofascial pain, arthritis, cancer, post-operative conditions and so on.

CONCLUSION

Upanaha is an effective topical application and more research can prove whether it also is a Transdermal Therapeutic Agent. It can work as instant relief in pain and inflammatory conditions.

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