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Standardization and simplification of physico-therapeutic procedures in Ayurveda and naturopathy — A preliminary study with Jala Neti

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Ayurveda and naturopathy describes many physico-therapeutic procedures, which are useful as sole therapy, initial therapy or as adjuvant therapy in many clinical conditions. Panchakarma therapy in Ayurveda and various application of water in naturopathy are commonly used procedures at Ayurveda or nature cure settings. These procedures, though found effective on anecdotal and clinical experience grounds, have not been able to gain enough support to be used as primary therapies. The limiting factors identified so far could be listed as the intricacies associated to their use, requirement of close supervision, requirement of indoor treatment, and lack of standardized protocols, which may be useful for the practical purposes. This was hypothesized that a simplified version of these procedures, which may deal precisely with the limiting factors and essentially without cutting into the effectiveness of the therapy, would be able to draw a quick attention of its presumptive beneficiaries. A simplified version for Jala Neti (saline nasal lavage) was conceived and tried in few patients for its comparative ease of operation and benefits. This preliminary study was able to show an improved applicability of alternative method to the conventional method of Jala Neti.

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Ayurveda is a commonly practiced indigenous system of medicine having it roots from India. In wake of current resurgence of alternative medicines in a global scenario, Ayurveda has also sought its successful expansion to many countries including Europe and US¹. Apart from herbs, minerals and herbo-mineral compositions, Ayurveda also utilizes certain physico-biological procedures (physical procedures having their instant or remote biological effects) as a measure to eliminate disease². Commonly utilized procedures in Ayurveda are grouped as Panchakarma, which determines 5 different procedures done sequentially or differentially as per the individual requirement. The Panchakarma procedure is highly praised by the Ayurvedic physicians on account of its sound literary background and on their own clinical experiences. In many conditions, Panchakarma is taken as first respite to cleanup the body and to make it more susceptible for the usage of further medicines³. Naturopathy practices in India also utilize various procedures as sole or adjuvant therapies. Various baths, steam applications, packs, Neti and Kunjal are commonly employed methods in these settings⁴. Despite of the praise of these procedures, this is found difficult to apply them with preciseness and with calibrations to acquire predictable results. There are specific protocols made about these procedures available in the ancient texts but in the lack of uniformity, they are difficult to follow. There are also limitations in following the ancient version of these protocols as many of the measurements mentioned are available in non metric system and are difficult to be precisely translated⁵. Lack of standardization is considered as the biggest pitfall in the growth and dissemination of Ayurveda⁶. Apart from bringing the standards in production of medicine, this is also considered essential to look into the procedural aspect of Ayurvedic therapy and to make them standardized. Standardization of a procedure is rather easy and can be rewarding instantly. This is why, it is considered as a priority field in the comprehensive vision of setting the benchmarks in Ayurvedic clinical practice.

Apart from the description of various surgical procedures, there are many others, which form an important component of clinical practice in Ayurveda. These procedures are called as Samsodhana and are

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broadly classified as Panchakarma composed of 5 procedures. These procedures can be utilized in combination or separately in a given condition. A brief account of these procedures is as below. Samsodhana therapy is aimed at cleansing the body, of pathogens and toxins and so to make the body healthy again. This is considered as a very important method in Ayurveda and is the only radical therapy, which nullifies the chances of recurrence of diseases. Samsodhana therapy basically comprises of three fundamentals steps namely pre-operative, operative and post-operative. Each of these steps is aimed at certain objectives to maximize the total therapeutic results. Without imparting all of these steps, a desired result cannot be procured. Samsodhana procedures are also known as Panchakarma (Pancha = 5, Karma = method) because of utilization of 5 fold purificatory measures. This includes emesis (vamana), purgation (virechana), oil enema (anuvasana), non-oil enema (asthapana) and snuffing (sirovirechana). Many a times, Samsodhana is done prior to start of any kind of medicine so as to clean the body, enhance the metabolic status and to increase the acceptability and efficacy of this to the body. Thus, a Samsodhana therapy followed by Samsamana or internal application of medicine often results in better therapeutic responses.

Measures prior to Panchakarma
This is also known as Purvakarma (Purva = Prior, karma = work). This includes the process, which is done to dissociate the toxins from the body. Ipso facto, the same can be eliminated easily through the eliminating process. The physiological changes occurring in the body during the Purvakarma process are essential to optimize the desired effects and also to counter act any adverse effect of the main procedure. Oleation (snehana) and fomentation (swedana) are two main processes to be done prior to the Panchakarma proper.

Oleation (snehana)
Oleation is the administration of fat or oil to the body externally, internally or both to smoothen the channels and to dissociate the deep seated toxins or disease causing factors (dosas) so to take them out easily. Fat destroys abnormal vata, renders the body soft and clears the accumulated waste, which has obstructed the body channels. The fat used in the process can be of plant or animal origin like different oils or fat, lard and bone marrow. Out of these categories ghrita is considered best for the common purposes. For the specific uses oil is considered good for vata (neuro-rheumatic) diseases, ghrita for eye and pitta (digestive) diseases and fat for kapha (metabolic) diseases.

Various methods are utilized for the application of oleation therapy. External application is done in the different forms of massage locally or generalized. For internal application, usually fat is added to some recepies to make it palatable for ingestion. These various preparations are known as pravicharana. These recipes are carefully tailored according to the taste or the need of the patient. External oleation can be done by massage. For internal application, a specific dose of fat has to be determined for every patient according to his disease status and individual susceptibility. Usually, it takes more than a day for complete oleation of body and to obtain the desired physiological responses. Again this depends upon the individual’s capacity for the fat preparations and can be extended from 3-5 days. It shall never be extended beyond 7 days as in 7 days one metabolic cycle in the tissues gets completed and then after the body gets adapted to the excess of fat. For the internal application, the fat can be taken along with food, drinks or in isolation. It is preferable to have hot drinks after fat ingestion as it increases its dissociation, digestion and absorption without which the excess fat can lead to stetorrhoea or other complications. There are features described to judge the adequacy of fat therapy. The hypo, hyper or the proper administration can be judged accordingly. Usually, the softness of stool and no desire for further fat is considered as best indicator for adequacy of fat administration.

Fomentation (swedana)
Fomentation is usually done after oleation or often simultaneously with this on day-to-day basis. This is the application of dry or wet heat directly or indirectly over the body to produce the warmth and so to produce the sweat. This results in increased metabolic state of body and causes better mobilization of toxins deep in the tissue. The effect presumably reaches at the places of need and eliminates the water-soluble toxins along with the sweat. As the body is considered an integral whole of channels and conduits, any obstruction anywhere in the channels leads to the obstructive pathology. Fomentation along with oleation is the best way to reestablish the integrity of
channels insuring for the smooth flow of metabolic substances. There are various ways adopted for fomentation therapy. Apart from direct application of heat in different forms like steam or hot bags, this can also be done with the help of some physiological procedures like exercise and similar activities. For the symptoms caused by local obstruction, fomentation itself or combined with oleation can work as a complete therapy and the symptoms can be felt relieved as early as the treatment is over. The technique for the fomentation is also selected as per the requirement of the patient. This can be dry or wet, local or generalized and with or without oleation. Total duration of the Purvakarma is also decided according to the individual need and can be extended between 3-7 days.

There is certain care to be observed while operating for Purvakarma procedures. For oleation, as externally this is followed by massage, this should be done by the trained person so to get the desired effects. Proper direction, pressure and smooth movements are the essential components of a good massage practice simultaneously care shall also be observed for the fomentation process so as not to hurt or burn the patient. This is particularly important in persons who are having sensory disturbances due to pre existing neuropathic conditions. For ischemic and hypertensive people also special care has to be taken. A generalized body fomentation can cause initial rise in blood pressure followed by a fall in the same due to pooling of blood to periphery from the viscera owing to the peripheral vasodilatation. This may produce a myocardial insufficiency in the people who are known ischemic. Those who are receiving it for the first time shall be reassured and well informed before the start of the treatment.

**Therapeutic procedures (Pradhana-karma)**

This (Pradhana = main, Karma = work) stands for the main therapeutic procedure often named as Panchakarma. After proper preparation of the patient by performing Purvakarma in proper, any one or a combination of the 5 procedures can be selected for the treatment. These procedures are selected according to the disease identification, pathogenesis and often as per the site of the disease. As Panchakarma is basically the cleansing procedures, they are intended to clean the major channel of the body by different means like emesis, purgation and enema. Toxins and pathogens, which are smoothened and dislodged from the site of their fixation by the Purvakarma, are now finally taken out of the body by these methods. These five procedures are–

**Therapeutic emesis (vamana)**

This is the therapeutically supervised emesis in which upper half of the GIT is cleansed by the process of vomiting. As upper part of the body is considered as the site for Kapha (one of Tridosha, basic physiological units of the body characterized by smoothness, heaviness and cold), Vamana is an effective way to deal with Kapha disease. This includes various respiratory tracts diseases like asthma and bronchitis and digestive diseases like indigestion, dyspepsia and anorexia. Apart from these conditions this can also be utilized in acute fever, common cold, diabetes, and poisoning. As all the major therapeutic procedures are exhaustive in nature, they require a good physical and mental state of the patient to cope with the transient physical strains. Because of this, these are usually contra indicated to the elderly, debilitated, children and those who are very nervous about the procedure. These are also contraindicated in pregnancy, to the starved, just fed person, trauma and in other serious complications of the existing diseases. On the day assigned for emesis, after proper preoperative preparations, this is induced by a specific emetic preparation made of powdered seeds of Madan Fala (Randia spinosa). This is then assisted by ingestion of stomach full of saline water. At the start of emesis Kapha comes out first and indicates the cleaning of upper part of GIT as well as respiratory system. The moment when bile starts coming in the vomitus the process is considered as complete. Post operatively; it is advisable to have a medicated smoke to sooth the irritated channels. It is advised to avoid the strains, have light food and relax postoperatively to regain the strength.

**Therapeutic purgation (virechana)**

This is again the supervised purgation meant for rectifying the diseases of pitta (metabolic and digestive diseases) mainly associated with the middle of GIT. After the proper preoperative preparations, purgatives are given in proper dose to initiate bowel movements as per the requirement. Purgation therapy is also very effective in skin diseases, metabolic disorders, ano rectal diseases and jaundice.

**Therapeutic enema (Vasti)**

Vasti is one of the most important procedures in Panchakarma. For the lower GIT and for the diseases
of lower part of the body, this is the best treatment considered. According to the ingredients, this can be divided into two – oil enema (anuvasa), and non-oil enema (asthapan). Both of these methods are having different indications and way of preparation.

**Oil enema (anuvasana)**

Here, the preparation used for this enema usually contains oil in it and thus is called as oil enema. This is indicated in cases of dryness of the body, neuromuscular disorders of lower part of the body and lower GIT diseases. This is also meant to infuse power in debilitated patients. For vasti therapy, a vigorous preoperative procedure need not to be followed and instead a simple oil massage with fomentation before vasti can work. In a lightly fed patient lying in its left lateral position, enema should be introduced. Preparation has to be relieved slowly in the rectum and has to be retained for a while until the patient feels an urge to evacuate.

**Non-oil enema (asthapan)**

This is done with the help of decoctions of some herbs and as the name indicates, oil is not used in its preparation. Non-oil enema has multiple uses and is recommended in nervous diseases, gastrointestinal diseases, intermittent fever, dysurea, urinary calculus and menstrual disorders. The method of application is almost the same as is done in oil enema. This is also the retention enema so has to be retained till the urge of evacuation arises. There is a schedule of number of vasti prescribed in individual cases. This can range between 30, 15 or 8 according to the requirement. Usually, both kind of vasti are given alternatively in a single treatment schedule to enhance the efficacy.

**Nasal stuffing (nasya)**

Any medicine given through nose is known as Nasya therapy. As nose is considered as the doorway of head, this method is considered very effective to treat the head, eye, ear, nose and throat diseases. In this process, usually the medicine are poured in nostrils while the patient is lying in supine position.

**Post-operative measures (Paschata-Karma)**

(Paschata = after, Karma = work) As the name indicates, this is the after care for the patient who received the Pancha-Karma proper. This is basically a care for diet and daily routine and is meant to regain the metabolic normalcy after transient strains. Strenuous activities should be avoided and a course of diet should be adopted. The diet starts from the soups and other light meal on the day one reaching to normal diet only after few days.

**Naturopathy procedures**

Common naturopathy procedures are mud pack; enema, hip bath; abdomen pack; spinal bath; hot footbath; steam bath, and Jala Neti. Standardization of these procedures in naturopathy has gradually been evolved as per the practical requirements. In some ways nature cure procedures seems more easy to operate and less intricate than Ayurvedic procedures. This is mainly because Ayurvedic procedures are essentially added with drugs and their preparations where as in nature cure these procedures are done with the help of five basic elements only.

**Pit falls in Ayurvedic and naturopathic procedures**

Ayurvedic procedures, as is the case of Ayurvedic medicine too are traditionally standardized on individual basis. The people are categorized on their digestive capacity and are grouped as Mridu Kostha (those who can not tolerate the medicine and get purgation easily), Madhya Kostha, and Krura Kostha (gets the purgation with difficulty). The dose of medicine to be taken internally and length of the procedure time is usually decided upon these determinations. As these determinations are largely subjective, there are variations in patient-to-patient judgments, which by and large affect the predictability of the therapeutic effectiveness of the procedure under taken. Many other aspects of the procedures are also subjective. There are also the problems associated with unavailability of standard instruments, lack of sterilization and unavailability of a universally applicable working module. Application of the type and length of the procedures is also depends upon individual Prakriti, which again is a subjective phenomena and is difficult to be ascertained with confidence in routine clinical setting. Ayurvedic procedure may also be associated with some adverse reactions if the selection of the patient or the selection of the procedure is not done wisely. There are mentions about these adverse reactions in Ayurvedic textbooks but these needs to be more elaborated and requires a mention of its timely management. As Ayurvedic procedures per se are time and cost intensive proposals, any limitation on the part of therapy would result in loss of money and time.
without getting the desired therapeutic effects. This may also result in some adversities if the procedures are not cleanly undertaken.

**Pit falls in naturopathy procedures**

These are not too many except a few problems identified in individual procedures. In mud packs, the quality of mud seems important. In various bath, optimal temperature identification seems important. In *Jala Neti*, sterilization of ware, quantity and quality of salt added is crucial. Length of these procedures and their frequency is also important to be recognized.

**What are standardization and its advantages?**

Standardization gives an opportunity for a product or a procedure to be established as a benchmark. A product, which follows the defined practices of production and its utilization, can be established as a brand owing to its consistent delivery of the benefits as per the documented commitments. This helps in building up the confidence of consumer about certain product or service and simultaneously helps them differentiating between a range of products available in the market.

**Why standardization in traditional medicine?**

*Ayurveda*, despite of its potential to be disseminated as a healthcare modality which is economical, ecofriendly and is derived from the indigenous sources utilizing the locally available resource, is lagging behind to other contemporary traditional medical practices. The reasons identified for this state of condition are mainly the poor quality of the drugs and lack of well-defined code of practice relevant to the contemporary world. Lack of uniformly acceptable code of practice with documented evidences for their effects is also not available in *Ayurveda*. Standardization seems to be a primary requisite to establish the worth of these procedures, as this will ease the scientific clinical studies in controlled design to evaluate it better.

**Previous approaches**

Standardization of *Ayurvedic* drugs is taken up seriously these days. WHO has framed a code of Drug Manufacturing Practice in *Ayurveda*. Indian government has also undertaken many measures to observe GMP in *Ayurvedic* drug production. Many testing laboratories are working in collaboration with *Ayurvedic* pharmaceuticals to make the *Ayurvedic* drugs more authenticated. A number of chemical tests and analytical procedures have been devised to test the products for their quality and their desired compositional details. If these practices are taken honestly, we may look for a complete change in appearance of *Ayurvedic* drugs in near future. There have been fewer approaches to standardize traditional procedures and by and large the procedures are practiced with the traditional wisdom and expertise. There are regional variations in application of these procedures, which have not been addressed properly. Anecdotal claims are made by every individual practitioner or by their followers to say a worth for methods adopted by them but a comparative study has never been approached. There are also only limited approached made to simplify the complexities associated with these procedures.

**A preliminary study with *Jala Neti* standardization**

*Jala Neti* is a variant of *Nasya* therapy described in *Ayurveda* and is meant for disease pertaining to nasal passage and head. This is also practiced as an independent mode of therapy by naturopathy practitioners in India on account of its description in *Yoga* literature for its cleansing properties. *Jala Neti* is found effective in conditions like rhino sinusitis, nasal polyps and is anecdotally reported for many of other benefits including head ache, migraine and nasal aspergillosis. Being a commonly practiced procedure at *Ayurvedic* and naturopathy clinics in India, this was considered important if this procedure could be standardized to a format which may be easily operable and universally acceptable. In *Jala Neti*, lukewarm saline water is used for this purpose with the help of a special pot called *Jala Neti Pot* (*Neti’s Pot*). This pot is a simple irrigation pot with a capacity of 150-200 ml and with a nozzle on one side to facilitate irrigation. Technique of *Jala Neti* as described in nature cure texts is as following. Squat on the toes in *Khaga asana* (crow posture); tilt the head to the right side and place the *Neti* pot’s nozzle in left nostril; open the mouth slightly and breathe through mouth. Keep the whole body relaxed and let the water come out of the right nostril; after half of the water is used, remove the *Neti’s pot*, remain bend forward, center the head and let the water come out of nose; close the right nostril with thumb and blow gently to remove any remaining water from the cavity; and repeat the process from other nostril. Through out the process breathing has to be done with...
mouth. While blowing out the remains of water from nasal passage, it should be moderate to avoid any harm to ear.

Lacuna to the current Jala Neti practice in India are tried to be identified and could be enumerated as:

**Compulsion of a specific pot called as Neti Pot to start with the procedure.**
This was considered as a limiting factor as in the absence of Neti Pot, Neti is not possible even if some one desires to do this.

**Need of sterilization of Neti Pot**
The irrigation pot if used in more than a person in a sitting without sterilization leads to the chances of cross infection. This needs a sterilization of the pot every time if has to be used by more than one person sequentially.

**No quantitative measurement of the water consumed or required**
In the conventional process, water is filled in the Neti Pot and is used for the procedure. The capacity of the pot is different in different make of pot and more over the pot does not have a calibration to measure the quantity of water actually consumed.

**Requirement of hot water**
Warm water is required to do the Neti process. In the absence of safe and sterilized water, this is possible that some water contaminants may get inoculated in the nasal cavity. This may be potentially dangerous as these infections may directly have an access to the interior of scalp.

**Sterilization of water**
A sterilization process of water if done at home is time consuming and cost intensive. Water is needed to be boiled and than cooled to make it usable.

**Requirement of salt**
Salt has to be added to the water. This is again done only empirically. Any excess of the salt will make the solution hypertonic and any amount less than desired will make it hypotonic. In both of these conditions, this will cause irritation to the inflamed nasal mucosa and will make the process difficult to follow.

**Changes suggested**
A disposable prefilled polypropylene bottle of normal saline (100 ml) was considered as a measure to rectify the lacuna identified in conventional use of Jala Neti therapy. This was thought to be helpful on following accounts (Table1).

**Disposability**
This is a disposable unit of prefilled container, has to be used once only so there are no chances of cross infection.

**Easy availability**
These bottles are easily available at the chemist shops dealing with intravenous infusions.

**Easy to carry**
These prefilled bottles can easily be carried in their unused forms to a place away from the place of its purchase.

**Measured amount of water**
A fix volume bottle helps in quantification of the water consumed.

**Fixed proportion of salt**
Normal saline contains the salt quantity, which is isotonic to our body fluid. As this does not require any addition of salt from out side, the chances of contamination of the solution through the salt or any inconvenience due to the mismatched salt proportion are nullified.

**Pre-sterilized solution**
As this solution is meant for intravenous usage, this is pre sterilized and does not require ant further sterilization.

**Methodology**
A pre-filled 100 ml normal saline solution in a polypropylene container was used in place of conventional Jala Neti pot filled with water added with salt. The bottle was kept in a water bath to make it warm and is than pierced with a blunt needle at the tip to make a vent for saline. The bottle is used exactly in the way as the pot is advised in the conventional Neti therapy. A gentle pressure of grip was added in addition to make a smooth flow of saline into the nasal cavity. After the consumption of half bottle the process was repeated in the same way with the other nostril.

**Clinical experience**
The alternative method of Jala Neti therapy was used in 10 patients, who were known to the classical
method of Neti too. Apart from its clinical efficacy, they were also enquired about the convenience of the operation. Enquiry was made on following accounts (Table 1) and the responses were recorded in comparative grading comparing the conventional and alternative Neti module. On account of convenience of usage, the alternative method was rated better than the conventional method whereas on account of clinical efficacy it was considered as at par with the conventional method.

### Conclusion

There are many physico-therapeutic procedures in Ayurveda and naturopathy, which are useful in many clinical conditions. Unfortunately, the philosophical tenet of their concept and complexities associated to their usage limits their use by the specific centers and by the specially trained people. This limits the use of these procedures to a limited segment of the society despite of its potential to be used as a supportive therapy in many more conditions for a larger segment in the society. This was conceived that a simplified version of these procedures should be identified which may essentially contain the goodness of the conventional method but may be easier in its operation. It was considered as a step, which ultimately is supposed to evolve a more standardized version of the conventional therapies having a wider acceptance. Jala Neti, a commonly employed procedure for rhino sinusitis and nasal polyps was taken initially as a starter for the simplification and standardization of traditional procedures. An alternative approach using a prefilled pre sterilized normal saline bottle was considered more convenient in comparison to the classical method in a preliminary trial.

### References