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Role of *Panchakarma* in preventing lifestyle disorders

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ABSTRACT

Lifestyle disorder is an umbrella term given to all the diseases which arise because of unhealthy lifestyle. Lifestyle diseases, a subset of non-communicable diseases (NCDs) are a result of the way we live, work and go about our everyday lives. Developing countries like India is predicted to have most number of Lifestyle related patients in the next 10 years in the entire world. Health promotion and preventive health approaches are proven effective strategies in reducing disease burden with lower costs compared to the cost of NCD treatment. There is a definite need of an approach to understand the psycho-somatic impact on the human body and emerging lifestyle diseases. And the hope to treat Lifestyle diseases definitely brighten with the broader approach of Ayurveda. Ayurveda provides better solution in the forms of proper dietary management, lifestyle advises, *Panchakarma* like detoxification and bio-purification procedure and rejuvenation therapies. If the factors involved in pathogenesis of these lifestyle disorders are reviewed on the basis of Ayurveda, the symptoms shows *Agnidushti*, *Kaphadushti*, *Mansavaha* and *Medovahadushti*. Life style disorders can be prevented through *Panchakarma* as it prevents vitiated *Kapha*, *Meda* etc. along with stress and strain of mind as well as body.

Key words: Lifestyle disorder, Non-communicable diseases, Ayurveda, Panchakarma, Medovaha.

INTRODUCTION

Lifestyle diseases (LDs) are the outcome of the way we lead our lives. Lifestyle diseases can be barred and their influence weakened with lifestyle modulation, improving diet and making host-environment interaction healthier. Emerging spectrum of LDs is a big health challenge. The most important period in life is between 40 to 50 years of age, when the impact of

one's lifestyle is visible and manifested as disease, because system biology gradually gets deranged with the input of disease determinants causing sustained imbalance in metabolic modalities.^[1] With the increase in environmental pollution, professional work load, proliferating stress, unhealthy lifestyle choices and general dietary indiscipline, the incidence of lifestyle diseases like hypertension, diabetes, obesity and cardiovascular diseases has increased manifold over the last two decades.

Other commonly occurring lifestyle diseases includes depression, joint pain, fatigue, arthritis, metabolic disorders, early degenerative changes, early aging, respiratory diseases and gynecological disorders. Nearly all of them can be traced back to improper ingestion and nutrition, lack of calmness and focus, constant feeling of agitation, listlessness or jitteriness, sedentary or workaholic professional life, or inadequacy of physical exercise and leisure time.^[2] Dilemma with Lifestyle disorders are that these are insidious in onset, takes longer span to become cause

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of death, medicines are not effective in its treatment, these disorders are not easy to manage and there is no permanent cure for such kind of disorders.^[3]

These diseases were explained in Ayurveda under *Santarpanjanya Vyadhis*. If we review the factors involved in Ayurveda pathogenesis of these disorders, these are mainly vitiated *Kaphadosha*, *Dushitarasdhata*, *Agnidushti* and *Ama*. Mainly these diseases are due to *Sanchayapradhana* or *Santarpanajanyaavastha*. Pathogenesis occurring due to this western life style can be prevented by following Panchakarma therapies. Panchakarma and its allied procedures like *Nasya*, *Abhyanga*, *Mardana*, *Gandusha*, *Anjana*, *Udvartana* etc. are found to be highly effective in prevention of such type of diseases.^[4] Ayurveda hypothesizes that metabolism of body is an indication of physiological state of *Agni* (biological fire) at different level in the body. Any disturbance or defection in the metabolism leads to choking of channels through a biological pathogenic factor named *Ama*, responsible as a part of generation of disorders like Lifestyle disorders. In Classical texts, it is presumed that vitiation of *Kapha Doshas* followed by the other *Doshas*, is the main initiating factor and involvement of *Meda* and other *Dushya* is of special significance, because such a pathogenic feature of the disease^[5] by the excessive intake of *Madhura Ahara*, *Snigdha Ahara* (Fatty diet), *Adhyashana* and sedentary life style etc. Due to these *nidana*, as *ahara* taken is not properly digested. This may lead to formation of *Ama* i.e. a reactive species. This form of *Ama* is distributed all over the body with *ahara rasa* and mainly increases the *Sama Medadhatu* (Visceral Adiposity) because of its excessive unctuous and sweet nature. This *Ama* formation suggests that there is *Dhatvagni Mandata* at the level of *Medadhatu*. It is pointed out by Dalhana and Chakrapani in their commentaries on *Sushruta Samhita* that formation of *Ama* need not necessarily be due to the *Jatharagni Mandata* only and it may also occur due to impairment of *Dhatvagni Vyapara*.^[6] Panchakarma therapy is an integral part of Ayurveda (Indian Medical System). It is a term used to symbolize five medical procedures for internal purification of

body. It helps in detoxifying and rejuvenating body by simple techniques that can be done easily applied in outdoor practice. Failure of contemporary medicines in the prevention of major health burdens force us to revert back for the original detoxifying naturopathy. Panchakarma is an effective therapy in managing autoimmune, neurological, psychiatric and musculo-skeletal diseases of chronic and metabolic origin.^[7]

In the current scenario, these unique procedures are widely practiced by physicians in India and many other countries globally for prophylactic and therapeutic purposes. *Panchakarma* therapy is considered superior to *Samshamana* therapy in Ayurveda as the disorders treated with *Samshamana* therapy may sometimes be provoked again by gaining momentum with the help of etiological factors and vitiated environmental factors but in case of those treated with *Panchakarma*, there is lesser/no chances of gaining such type of momentum and thus, lesser/no chances of recurrence of a particular disorder.^[8]

The five technologies of *Panchakarma* includes *Vamana* (therapeutic emesis), *Virechana* (therapeutic purgation), *Asthapana Basti* (therapeutic decoction enema), *Anuvasana Basti* (therapeutic oil enema) and *Nasya Karma* (nasal medication). Ayurveda emphasizes more on the preventive aspect of the *Panchakarma* rather than curative.

It also facilitates the absorption of nutrient and drugs administered there after in favor to attain their desired pharmaco therapeutic effects. *Panchakarma* also restore the mental health, reduces the stress^[9] and therefore, help in the prevention as well as management of many lifestyle disorders. Benefits of *Panchakarma* procedure is Removal of impurities from the body.

- Restoration of equilibrium and harmony in the body.
- Removal of negativity and enhancement of an optimistic feeling, improvement of mental, physical, and emotional well-being, and an enhanced sense of self-worth.

- Overall improvement of health and well-being.^[10]

Panchakarma utilizes a set of therapeutic procedures which are given in a specific order to promote the elimination of toxic substances out of the body via the nearest possible route of elimination. *Panchakarma* accomplishes the removal of toxic accumulations and the return of the *Doshas* to normalcy and balance.^[11] All the *Panchakarma* regimens are followed to achieve the homeostasis and not just counter the specific symptom. That is why it outscores the conventional medicines when it comes to tackle a multi-dimensional disorder like Lifestyle diseases.

Panchakarma plays vital role in the preservation, maintenance and conservation of health and promotion of longevity. They form a part in the regimen of preventive medicine (*Swasthavritta*) indicated as prophylactic measures in the context of epidemics and pan epidemics. *Mandagni* is the cause for all diseases. For correction of *Agni Panchakarma* is the best treatment.

Roganusara Panchakarma

Diseases are the outcome of disturbed *Doshas*, and thus *Panchakarma* treatment is used for all types of diseases. Some of the diseases that are commonly treated are;

Karma	Dosha dominancy	Diseases
Vamana	Kapha predominant diseases	Obesity, thyroid, diabetes, asthma, PCOS (polycystic ovarian syndrome) and skin diseases.
Virechana	Pitta predominant diseases	Hyperacidity, skin diseases.
Basti	Vata predominant diseases	Arthritis, spondylitis etc.
Nasya		Migraine, headache, sinusitis, hair fall, premature graying of hair, frozen shoulder, cervical spondylitis, sleeplessness, all

		ergies, etc.
Raktamokshana	Rakta predominant diseases	Gouty arthritis etc.
Shirodhara		Sleeplessness, headache, dandruff, psychological diseases, etc.
Abhyanga		Relaxation and frequent body pain.

Not every patient will require all therapies at any given time. Which of the many auxiliary procedures like *Shirodhara*, *Kati Basti*, *Janu Basti* etc. a patient is to receive is decided according to the season, climate, diet, emotional state of the patient, the knowledge and understanding of the physician, the length of treatment, in addition to the *Prakriti* (constitution) of the patient. Also, every treatment is individualized to meet the needs of each individual, including herbal oil selection, pressure, pace, marma points used and intention.

Research over the last 100 years has shown encouraging results for Ayurvedic treatment of various ailments, especially chronic disorders. "Lifestyle diseases" known internationally as 'non-communicable diseases' (NCD's) or 'chronic diseases of lifestyle' (CDL) emerge from inappropriate relationship of people with their environment. These are a group of diseases that share similar risk factors, which may be due to exposure over many decades, unhealthy diets, smoking, lack of exercise, and stress. *Panchakarma* in Ayurveda can provide a better opportunity to combat such diseases more effectively without causing its re occurrence. Purification procedures known as *Panchakarma* remove toxins from the physiology. *Panchakarma* revitalizes tissues and rejuvenates the body.

DISCUSSION

General Pathogenesis of Life style disorder on basis of Ayurveda^[12]

Less activity, High calorie food, lack of exercise → Result in *Kaphachaya*, *Rasa*, *Mansa*, *Meda Dhatu*

Shaithilya, Sroto Vaigunya → Symptoms of *Kaphachaya* → According to *Prakruti* and *Anshanshakalpana* → *Sthanasamshraya* → Causing - Diabetes, High cholesterol, Hypertension, Cardiovascular diseases, Depression.

Panchakarma procedures are used in order to cleanse the body channels, to eliminate toxins out of the body, brings about the harmony of bio-humors (*Tridosha* i.e. *Vata, Pitta, Kapha*, and *Manasa Dosha* i.e. *Raja* and *Tama*) to obtain long-lasting beneficial effects which further leads to chemical balance inside the bio- system and thus provide the normal chemical and electrical environment in brain and ultimately restore the homeostasis.

Vamana

It is the process of therapeutic emesis especially indicated to eliminate morbid *Kapha* out of the body and for the management of *Kaphaja* disorders. In case of Lifestyle disorders, *Vamana* is purely suited treatment modality as it removes the vitiated *Kapha* from the body which is the main reason behind such disorders.

- The main action of *Vamaka Dravya* is on stomach i.e. *Amashaya* of the individual. *Amashaya* is the specific seat of *Pitta* and *Kapha*. *Vamana* is a specific therapy for *Kapha Dosha*, acts on the very root cause of the vitiation of *Kapha*. The vitiated *Kapha* present in entire body is alleviated and expelled out through the mechanism of *Vamana* and disease process is suppressed up to the maximum level. After the *Vamana Karma* is over, these fat contents (*Abbadha Meda*) return to normal level, because *Sneha* is brought from the cellular level to the *Koshtha* from *Rasadi Dhatus* (tissues and cells) and finally is thrown out of the body.
- Vamana* is not merely a gastric lavage as considered by modern physicians, It has direct effect on *Agnisthana* i.e. liver and hampered *Agni* is one of the initiating factors in this disease.
- The *Vamana Karma* may evacuate off *Kapha Dosha* which may lead to *Srotomukhavishodhana*.

Thus, corrects the *Srotoavarodha* which thereby corrects the *Gati* of *Vata* i.e. *Vatanigraha* occurs.^[13]

Virechana

It is the process of therapeutic purgation especially indicated to eliminate morbid *Pitta* out of the body through anal route and for the management of *Pittaja* disorders. *Virechana* is even a treatment for *Pitta Samsargaja Doshas, Kapha Samsrista Doshas* and also for *Pitta Sthanagata Kapha*. It is worth mentioning that *Virechana*, unlike the modern purgatives, is not merely an act to open the bowel, but is a complete therapeutic measure which has systemic as well as local effects.^[14]

Virechana Karma removes *Bahudrava Shleshma* and *Pitta* from *Vayusthana* which leads to *Pradeepan* of *Dhatwagni* which in turn results in maintenance of *Dosha-Dhatu* equilibrium which is beneficiary for the formation of *Uttarottardhatu* and their nourishment. Each and every cell gets nourished through *Rasa* and *Rakta Dhatu* which enhances the production of essence of *Dhatus*. *Oja* in the body which is responsible for *Vyadhikshamatva* (immunity). Decrement of *Oja* is the major casualty in Lifestyle disorders which gets corrected through *Virechana*.

Niruha Basti

It mainly acts in two ways;

- Basti* administered in the *Pakvashaya* affects the whole body by its *Virya* similarly as the sun in the sky affects the *Bhuras* (water) though it is far away. This example shows action of *Basti* is not only dependent upon absorption of the active principle but also it affects the body as soon as these active principles comes in contact with the *Pakvashaya* proving the action of *Basti Virya* by *Nipata*.
- When *Basti* is administered in the *Pakvashaya*, its *Virya* (probably active principles) is taken up by *Samana Vayu* with the help of *Apana Vayu*. Then it reaches other *Vayus* also, and affects them by its action. It also keeps *Pitta* and *Kapha* in there proper places. It exerts its effect on *Bhutas* which

are similar to that *Guna* of *Virya*. The transport of *Basti Virya* is by *Kedarikulya Nyaya* which makes it spread all over the body by virtue of different *Vayus*. This quotation supports the theory of absorption of *Basti* active principles i.e. phytochemicals of the *Basti* as the action is dependent upon *Gun*as which are the properties in *Dravya*.

Various *Basti* like *Erandmooladi Niruha Basti*, *Mustadiyapana Basti*, *Dashmooladi Niruha Basti* etc. are highly useful in preventing lifestyle disorders.^[15]

Anuvasana Basti

The Mucosal layer is most superficial which comes directly in contact with the administered *Basti Dravya* (drugs). When the intestine gets purified daily, the layers of intestine and villi get the nutrition and further absorption of micronutrients may be enhanced and these micronutrients may enter the circulation and finally reaches to the target organ. Mucous membrane of intestine can easily absorb the lipid soluble content administered through the *Anuvasana Basti* and finally assimilate into the circulation for systemic action.^[16]

Nasya

It is the best method to eliminate and alleviate the vitiated *Doshas* of *Urdhvanga*. *Taila* has been mentioned for *Nasya Karma* in *Kapha-Vata Dosh Pradhana* condition.

- a. Aggravation of *Doshas* takes place in *Shirah* (head) due to irritating effect of administered drug, which results in an increased blood circulation to the brain due to vasodilator effect of histamine released in response to irritation caused by the *Nasya* drug.^[17]
- b. The facial vein has a direct connection to the ophthalmic vein and then to deep venous sinus within the cranial cavity the cavernous sinus. Facial vein does not possess any valve in its course, and the cavernous plexus stands for arteriovenous communication of the nasal cavity. Therefore, there is the possibility of reverse circulation of *Nasya Dravya*, reached to the brain

circulation after being absorbed by highly vascular mucous membrane of nasal cavity.^[18] Hence, accumulated morbid *Doshas* are expelled out from small blood vessels and ultimately they are eliminated through the nasal discharge and by salivation.

- c. Moreover, pre and post procedure massage and fomentation at supraclavicular and posterior part of neck help to improve the local circulation, enhancing the absorption of the drug and also relieves local stiffness.^[19]

Other allied Panchakarma procedures

- **Udvardana** - The effects of *Samvahana* as per *Acharya Sushruta* are *Preeti*, *Nidrakara*, *Vrishya*, *Kapha Vatahara*, *Shramapaha*, *Mamsa Rakta Twaka Prasadakaram*, *Shiramookha Virechana*, *Dourgandha*, *Meda Vilayana*. These effects are achieved by *Samvahana*, *Udvardana* etc.
- a. After *Ruksha Udvardana* or *Udgharshana*, *Kapha* is reduced. In this procedure, the metabolic waste products are carried by lymphatic's to the blood and ultimately excreted through the urine. So body becomes free of any toxins and feels devoid of heaviness. *Udvardana* - *Samvahana* like procedures drain out these metabolites including lactic acid, water and carbondioxide. So '*Shrama*' is reduced. Demolition of fat (*Meda Vilayana*). Massage when performed vigorously may emulsify fat in the superficial connective tissue cells. In the emulsified state, the fat globules may enter the lymphatic system and may be metabolized.^[20]
- **Shirodhara** - By this procedure, mind comes down to a tranquil state, it reduces stress, helps in normal and better function of mind. All the benefits of meditation and relaxation are achieved by the procedure of *Shirodhara*.
- a. In today's busy world no one gets time to lie down quietly and relax for a while. We are always exposed to lot of stress and tensions. If we lie down in a relaxed state for some time with the practice of meditation we definitely feel better.

The process of *Shirodhara* also produces a meditation effect which helps to overcome the complaint of insomnia and stress related disorders.

- b. On the other hand procedure of *Shirodhara* acts on the level of *Yogic Chakras*. It stimulates the supreme *Chakras* i.e. *Aagya Chakra* and *Sahasrara Chakra* which are situated in the head region. These *Chakras* govern all the vital energy in the body. Due to the stimulation of these *Chakras* the individual gets good mental condition. Hence Lifestyle disorders are benefitted by the *Shirodhara*.^[21]

Thus *Panchakarma* procedures can be found to be highly effective modality in various Lifestyle disorders by increasing the strength of *Agni*, leading to increased digestion power and increased absorption of nutrients and drugs. Thus, ultimately increases the bioavailability of nutrients and drugs.

CONCLUSION

Ayurvedic holistic view towards physiological and mental development has brought it to the forefront of non-medicinal remedies for various ailments and general malaise. It also brings about visible psychological and spiritual changes in the subject, thus securing an all round development in one's lifestyle. *Panchakarma* treatment is among the most popular of Ayurveda therapies and it is a rigorous process of detoxification and purification. These procedures helps to keep our body weight in check, hypertension at bay and enable us to be lighter, freer and happier in general. Also, it assists in dealing with stress, anxiety, tension, agitation, irritability and misery in a healthier manner. Once we overcome these symptoms of decadent lifestyle that is all around us today, we will automatically rise above crippling lifestyle diseases better than others.^[22]

REFERENCES

1. Lifestyle diseases.[cited 2018 June 03].Available from http://naturheilkunde.immanuel.de/fileadmin/user_upload/IK_Berlin/03_Abteilungen/03_06_Naturheilkunde/06_Aktuelles/06_02_Veranstaltungen/06_02_01_Ayurvision_2014/naturheilkunde-berlin-veranstaltungen-AyurVision_2014_Katoch.pdf
2. How Ayurveda is useful in preventing lifestyle diseases.India.[cited 2018 June 03].Available from <https://www.lybrate.com/topic/how-ayurveda-is-useful-in-preventing-lifestyle-diseases/c9392cccb4d3590a7f20ef6a693db5d5>
3. Lifestyle diseases.[homepage on internet].India[cited 2018 June 05]. Available from http://naturheilkunde.immanuel.de/fileadmin/user_upload/IK_Berlin/03_Abteilungen/03_06_Naturheilkunde/06_Aktuelles/06_02_Veranstaltungen/06_02_01_Ayurvision_2014/naturheilkunde-berlin-veranstaltungen-AyurVision_2014_Katoch.pdf
4. Maya Vivek Gokhale & Vivek Gokhale: Role Of Panchakarma Procedures In Dincharya For Preventing Lifestyle Disorders. International Ayurvedic Medical Journal {online} 2017 {cited 09 June, 2018} Available from: http://www.iamj.in/posts/images/upload/3439_3443.pdf
5. Nidhi choudhary Thesis(2017), Clinical Evaluation Of *Virechana Karma* In The Management Of Metabolic Syndrome. Rishikul Campus, U.A.U. Haridwar.
6. Sushruta Samhita, Ambikadatta Shastri, Ayurveda tatva sandeepika Hindi commentary. Edition : Reprint 2011, Sutra sthana, Chapter 15 Verse 3, Varanasi; Chaukhambha Orientalia; p.73
7. Kajaria Divya, Tripathi J.S,Tiwari.S.K, Utilization of panchakarma in health care: preventive, nutritive and curative treatment of disease. *J Pharm Sci Innov.*2013;2(5):1-5
8. Rajeshwar Dutta Shashtri et.al. (Ed.). (2005). Charaka Samhita (PP.). Chaukhambha bharati academy, Varanasi. Charak sutra 16 verse 22.
9. Singh, S. (2015). An Appraisal of Bio-Purificatory and Therapeutic Potential of Panchakarma, International Journal for Pharmaceutical Research Scholars, 4(3), 89-95.
10. Significance of panchakarma treatment.[homepage on internet].India[cited 2018 June 09].Available from <https://www.onlymyhealth.com/significance-panchakarma-treatment-1309177666>
11. What is panchakarma. [homepage on internet].India[cited 2018 June 03].Available

- from <https://www.ayurveda.md/panchakarma/what-is-panchakarma->
12. Maya Vivek Gokhale & Vivek Gokhale: Role Of Panchakarma Procedures In Dinacharya For Preventing Lifestyle Disorders. International Ayurvedic Medical Journal [online]2017 {cited 09 June, 2018} Available from:http://www.iamj.in/posts/images/upload/3439_3443.pdf
 13. Shipra Singh Thesis(2018), Clinical Evaluation Of *Vamana Karma* In The Management Of Dyslipidemia. Rishikul Campus, U.A.U. Haridwar.
 14. Agnivesha, Charaka Samhita, edited by R K Sharma, Bhagawan Dash: Edition- reprint. Chaukhambha Sanskrit series office, Varanasi: Siddhi Sthana, 2001; 1: 17: 151.
 15. BendeYogita, PawanLekurwale, Smita Mekhale, SurajRathod, Danga SK, ChetanGulhane. A Critical review on Pharmacodynamics of Basti Chikitsa and its action on Enteric Nervous System International Journal of Ayurvedic Medicine, 2015, 6(4), 301-304
 16. An Appraisal of Bio-Purificatory and Therapeutic Potential of Panchakarma Satyapal Singh V-4, I-3, 2015 ISSN No: 2277 – 7873. Review Article
 17. Tanwar SR, Thakar AB, Ramteke R. Clinical evaluation of Nasya Karma in cervical spondylosis: Case series. Indian J Health Sci Biomed Res [serial online] 2017 [cited 2018Jun20];10:335-9. Available from: <http://www.ijournalhs.org/text.asp?2017/10/3/335/213990>
 18. Kantikar P. Mechanism of Nasya. Mechanism of Panchakarma and its module of investigation. 1st ed., Ch. 6, Part 1. Delhi: Chaukhamba Sanskrit Pratishthan; 2013. p. 115.
 19. Tanwar SR, Thakar AB, Ramteke R. Clinical evaluation of Nasya Karma in cervical spondylosis: Case series. Indian J Health Sci Biomed Res [serial online] 2017 [cited 2018 Jun 2018];10:335-9. Available from: <http://www.ijournalhs.org/text.asp?2017/10/3/35/213990>
 20. PulakKantiKar.Udvartana – Samvahana Vis-A-Vis Effleurage. Review Article, International Ayurvedic Medical Journal ISSN:2320 5091
 21. Pokharel, Sanjay, and Ajay Kumar Sharma. "Evaluation of Insomrid Tablet and Shirodhara in the Management of Anidra (Insomnia)." Ayu 31.1 (2010): 40–47. PMC. Web. 20 June 2018.
 22. How Ayurveda is Useful in Preventing Lifestyle Diseases[homepage on internet].India[cited 2018 June 03]. Available from <https://www.lybrate.com/topic/how-ayurveda-is-useful-in-preventing-lifestyle-diseases/c9392cccb4d3590a7f20ef6a693db5d5>

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