

WORLD JOURNAL OF PHARMACEUTICAL RESEARCH

SJIF Impact Factor 8.084

Volume 12, Issue 11, 1495-1506.

Review Article

ISSN 2277-7105

ROLE OF AYURVEDA IN PALLIATIVE CARE – A REVIEW

Anu Saini¹* and Pradeep Saini²

¹Assistant Professor Kriya-sharir Department, Gangaputra Ayurved Medical College, Jind Haryana.

²Ph.D Scholar, Dept. of Kayachikitsa, Faculty of Indian Medicine System, SGT University. Gurugram, Haryana.

Article Received on 18 June 2023,

Revised on 08 July 2023, Accepted on 28 July 2023

DOI: 10.20959/wjpr202311-30955



*Corresponding Author Dr. Anu Saini

Assistant Professor Kriyasharir Department, Gangaputra Ayurved Medical College, Jind Haryana.

ABSTRACT

Add life into days not days into life, Ayurveda is being the most renowned traditional systems of medicine which survived and flourished from ages till date, and guides how to live a healthy life and treat enormous medical conditions which can be apply on current healthcare issues. In terminally ill cancerous and poor prognosis patients after unfruitful efforts, lost hope from relative's and patient may dilute intent of treatment resulting in worsening the condition medically, mentally, morally and socially. So it is ethical, moral responsibility of healthcare system to make every possible effort for betterment of patient. Ayurveda can play a major role in palliative care through some suitable, convenient treatment measures along with conventional palliative care in terminally ill patient. Here we discuss the scope of Ayurveda interventions for additional benefit and convenience of patients in palliative care.

KEYWORDS: Ayurveda, Palliative care, Terminally ill cancerous patient.

INTRODUCTION

Now a days Ayurvedic treatment are preferred by the patients at various points in chronic diseases for various purposes like, to boost immunity to prevent from infectious disease, better quality of life and for various chronic disease management.^[1] However, critically ill patients and left out cancer cases or bed ridden patient like (stroke patient), are mostly managed through conventional medicine (i.e., allopathy) palliative care. However, Ayurveda can play a major role in palliative care patients through some suitable and convenient treatment. Ayurveda interventions like. Vrana karma (wound care), Basti (per rectal drug administration), Snehan-swedan (massage, fomentation), Kawal-gandoosha (gargling), Shirosnehan (oleation of head), etc. they may contribute as alternative or complementary to ongoing palliative care practices of wound care, urine-bowel related issues, ambulation, oral hygiene, stress management, and pain management. Palliative care is an approach that improves the quality of life of patients and their families who facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual. [2] so it is an attempt to explore possible areas and situations where Ayurveda with its principles and practices can broaden its spectrum in palliative care to serve such patients. As per World Health Organization (WHO) Global Atlas of palliative care at end of life, [3,4] there were approximately 56.8 million people are in need of palliative care, most of live in low- and middle -income countries for children,98% of those needing palliative care live in low and middle income countries with almost half of them living in Africa. These facts highlight the need of focus on palliative care in such disease. National palliative care program has been promoted by the Ministry of Health and Family Welfare, Government of India and it is the part of 'Mission Flexi Pool' under National Health Mission (NHM) having a goal of an availability and accessibility of rational, quality pain relief and palliative care to the needy, as an integral part of health care at all levels, in alignment with the community requirements. Ayurveda contributions if incorporated with this plan can concur with agenda from National Health Policy 2017 of mainstreaming AYUSH systems.

DISCUSSION

In Terminally ill cancer patient we need different and more intense management approach than that of a routine patient of the same disease. A bad prognosis regarding the disease can lose hope of patient and relatives and can breakdown the them physically, mentally, morally and socially. However, it is ethical and moral responsibility of every healthcare professional to make every possible and sincere effort for betterment of patient^[4] usually, in Cancerous patient who had bad prognosis, the issues which arise are like non-ambulation, artificial nutrition, artificial hydration, artificial ventilation of the patient which makes the scenario difficult to us to think toward more suitable or convenient quality palliative care management measures for end-stage cancer patients. The current practices of palliative care management mainly based on the principles of allopathic and nutritional sciences. These practices have established scientific guidelines and are currently practiced worldwide.

Role of ayurveda in palliative care

Palliative care refers to the health care of patients with terminal condition and intends to improve the quality of life of such cases. It relates to identification and assessment of the disease that has advanced, has become progressive and incurable, and aims to provide treatment of pain and other physical and psychological concerns. Ayurveda may offer some added benefits to cancer palliative care and management especially, in feeding options, bowel/ wound management, ambulatory status, neurological well-being, and stress management through Ayurveda treatments and procedures (Fig. 1). To improve the quality of life of such patient's maintenance of nutrition is the first goal. The principles and care advised in Ayurveda in the form diet plan can play a major role in improving health status and nutrition level of the terminally ill patients. Some studies indicate that Ayurveda formulation effectively control the side effects of chemotherapy, as Ayurveda treatment focus on improving the immunity by strengthening the digestion and metabolism of the patient, the appropriate dietary approach and lifestyle modification as per the principle of Ayurveda as indicated for advanced and incurable condition as a part of *Pathya* (disease specific diet for such disease) can help to improve the patient's quality of life.

Artificial Feeding and Hydration

Besides, a protein-calorie calculation, Ayurveda has its different point of view as far as quantitative food and liquid intake is concerned. While dealing with diet and intake of a person in routine practice, Ayurveda pays more attention on Agni (digestive capacity) and koshtha (the tendency of elimination) of a patient. [7-9] But in terminally ill cancer patients, it is difficult to assess the status of Agni and koshtha, especially, if the patient is unconscious/semi-conscious in delirium. This is possible by assessment of patient's urine output, bowels, per abdomen examination, pulse examination and naadi-pariksha. [10] In patients having decreased appetite and digestive disturbances, some classically mentioned formulations[11] can be administered through nasogastric/gastric route for qualitative and quantitative feeding. Classical pharmaco-dietary preparations mentioned in Ayurveda classics may also use for a routine feeding. These formulations should be of Agni-friendly qualities viz. Laghu (easily digestible), ushna (warm), snigdha (unctuous), drava (liquid/ semi-solid) etc. Classically mentioned various bhaishjya-kalpanas (types of formulations) viz. kwath, yoosha, yavagu, shaadav, paanak, etc. may provide options and choices to feed the patient more correctly and effectively. [12] More importantly, these formulations are designed specifically by keeping into mind specific medicinal intentions like deepana (appetizers), pachana (digestives), anulomaka (carminatives), vata-shaamaka (vata-alleviating) and are also having disease-specificity, e.g. Shwasaharyavagu (soup for bronchial asthma patients) etc.^[13] The matra (amount of food/ liquid input) probably be designed as per patient's default food habits with appropriate consideration of current medical condition.^[15]

Wound care (Bed sores)

For cancerous non healing wounds, general wounds and for bed sores, specific wound care and medicines mentioned in Ayurveda viz. *Vrana karma* (dressing), *vranadhoopan* (medicated fomentation of the wound), *vranaropan* (wound healing treatment), etc. can prove a boon. Cleansing of wounds with specific *kledanashaka kwathas* (decoctions helpful for cleaning of the wound) like *Triphala kwatha*, *Panchavalkala kwatha* help to remove and arrest slough formation and also avoid and cure local infections. Herbs like *Guggulu* (*Commiphora wightii* (Arn.) Bhandari), *tagara* (*Valeriana wallichii* DC.), *vacha* (*Acorus calamus* L.), *nimba* (*Azadirachta indica* A.Juss.), *triphala*, *sarjarasa* are used for *dhoopanchikitsa*. Similarly, honey, medicated oils, and ghees are mentioned in classical texts to clean and heal the chronic wounds by *vranakarma* (dressings). Also, *dhoopanachikitsa* (medicated fomentation) is mentioned in Ayurveda to keep wound (and environment) clean and infection free.

Urine and Bowel related issue

Ayurveda proposes to avoid *vegavarodha* and *vegodeerana* (retention and induced expulsion of natural physiological urges like defecation, urination, thirst, hunger, etc.) for good health. These urges especially, urine, stool, and abdominal gases are not properly and adequately expelled in bedridden patients and patients disabled due to cancer. This brings about more vitiation of *Vata* and thus worsening the condition. Ayurveda advocates *Basti* (medicated enema) to alleviate *vata dosha* which also brings about normalization of body functions and mainly bowel evacuation and lubrication. *Basti* may help in smooth and proper evacuation of stools and abdominal gases in senile disabled patients, in patients who find it difficult to pass stools. Specially designed *bastis* of either medicated oils (*matra basti/anuvasan basti*) or of a mixture of decoction, honey, oil and rock salt (*niruha basti*) are used for this purpose. These *bastis* apart from bowel evacuation help to lubricate the GI tract, regulate gastrointestinal movements and functioning of the intestines, soften the impacted stool. And alleviate *Vata dosha* and thus improving the patient condition for some instance

Ambulation

To develop, maintain and improve ambulatory nature of the patient, along with physiotherapy and Yoga, *snehana* and *swedana* chikitsa^[27] (oil massage and fomentation therapy) may be performed. The routine activity of body and joints of bedridden cancer patients is very much limited. This brings about dullness, and complications like bed sores, thrombus formation, etc. With proper coordination with physiotherapy professional, the use of scientific massage with medicated oils (*snehana*) and medicated fomentation (*nadi-sweda*) movements, activity and strength of joints and muscles is achieved, maintained and developed. This helps not only in improving current quality of life but also in helping future rehabilitation of the patient.

Basti as a mode of Nutrition and Drug administration

Basti is a specialized panchakarma procedure, which is used in a very broad spectrum of medical conditions. It is not meant for just bowel evacuation as in case of soap water enema. Unlike soap water enema, basti is comprised of various contents as per the medicinal intent, viz. medicated oils, decoctions, milk, honey, ghee, cow's urine, etc. The dose of basti depends on several factors like type of basti, nature of basti dravya, medicinal intent and tolerance/comfort of the patient. Classically, basti is said to be antiaging, improving QoL, good for strength, Agni, complexion, cognition. It can be used in any age-group without any complications and alleviates many disorders. It evacuates imbalanced tridoshas, stool, urine from the body. It provides strength to the body. [28] Basti nourished the body as if any tree flourishes when watered at its roots. [29]

Basti can be a route of feeding in severely ill cancer patients, especially who are unable to consume food orally viz. patients of head and neck cancer, cancer of the esophagus, stomach. Also in cancer patients who are undergoing chemo/radiotherapy and suffering from severe nausea, vomiting, metallic taste, or patients having difficulty in maintaining ETF tube and IV line. The intra-venous line has its problems and complications over longer use, like thrombophlebitis. Secondly, it is difficult to fulfill the complete nutritional need of the patient through IV fluids. Hence, instead of choosing an option like nasogastric feeding or gastrostomy; basti chikitsa can be used to nourish the body by managing patient with specially designed bastis (yaapanabasti) are mentioned in classic texts which are mainly comprised of Ksheerapaka (milk), mamsarasa (meat soups), and some disease-specific herbs. These are described to increase bala (strength, vigour), mamsa (muscle strength and weight) and varna

(complexion)of the body. [30,32,33] Severely emaciated patients of cancer with the poor general condition can be benefited by *ksheera-basti*, *yaapana-basti mamsa rasa-basti*. These patients can gain weight and strength by *basti chikitsa* along with improvement in their symptoms and QoL. [34,35] This different route of nourishment may prove beneficial and also convenient to patients as well as to healthcare providers in long-term management of terminally ill patients. In severely ill and debilitated patients who even unable to retain such kind of *basti*; it is possible to administer the *basti* by drip method for better retention and absorption. [36]

When ingestion of drug per mouth is not possible, per rectal route can be chosen for drug delivery. Considering the *Agni* concept and role of the GI tract in drug metabolism, *basti* can be utilized as a mode of drug delivery. In case of severe fainting and blood loss and severe pallor, a *basti* containing fresh blood of an animal (goat) and a decoction of *darbha* (*Desmostachya bipinnata* (L.) Stapf) is advised in *Charaksamhita*.^[37] A systematic and safe application of this practice can be thought of in an appropriate case, possibly in severely anemic patients or in haematologically malignant cases.

Enough evidence are found about rectal feeding in various cultures like ancient Egyptian and Greek, where materials like barley, wheat, whey, wine, milk, eggs, and deer marrow.^[38]

Abhyanga (Oil massage)

As per the Ayurveda classic texts, *abhyanga* should be used regularly as, it promotes antiaging, alleviates fatigue and *vata*. It is beneficial for good vision, proper nourishment, long life, sound sleep, the good complexion of skin and strong body. Scientific and gentle massage with sesame oil (*Tila taila abhyanga*) can be used and utilized as a multipurpose tool. Oil nourishes the body, as the skin is the largest organ in the body. It strengthens muscles and joints by enhancing blood circulation also keeps joints well mobile, which is crucial in senile patients and longstanding diseases. Thus, *abhyanga* can be adapted as a routine daily treatment of such patients, under medical supervision.

Shirodhara, Nasya, Karanpurna

The other treatment procedures like *nasya* (nasal instillation of medicine), [42-44] *karnapoorana* (instillation of medicine in external ear), [45] *shirodhara* (a procedure of pouring medicated oil/decoction/medicated milk on forehead), [46-48] *shirobasti* (pooling the liquid medicines, herbal oils and/or decoctions in a compartment constructed over the head), [49,50] *shiroabhyanga* (head massage), *shiropichu/thalam51* (medicated douche on head at anterior

fontanel region) also can be routinely practiced to maintain or to improve good neurological state of the patients.

These procedures are having beneficial effects on *indriyas* (various basic and advanced neurological functions and centers of the brain).^[52] These measures can be practiced daily as a routine without any significant confounding risk. *Shiro-snehan* (with its above mentioned four types, i.e. *abhyanga*, *seka*, *pichu*, *basti*) with oils/milk/ decoctions can be used in highly irritable patients for their psychological and social well being.^[53,54] *Shirodhara* is definitely helpful in reducing/avoiding the use of CNS depressing medications in these patients. *Shirodhara* is also having some "side-benefits" like sound sleep, reduction in stress etc.^[54]

Gandosha kawal^[55]

Ayurveda recommends *gandoosha* (oil pooling in the oral cavity) and *kawala* (gargling) as *dincharya* (a daily practice) and also as treatment measures. In *gandoosha*, either of decoction, milk, medicated oil, and medicated ghee is retained in the mouth as long as possible. This is said to be helpful for good health and hygiene of oral cavity, the strength of teeth and gums.^[56] In *kawala*, the said liquids are used for gargling. Either or both of these two treatments can be used in various terminal cases of cancer mainly as a measure for oral hygiene. It may help in treating various disturbing symptoms and conditions like radiation mucositis, ^[57] oral submucous fibrosis (OSMF), ^[58] dry mouths, gum problems, dental symptoms, etc.

Pain management

Pain is a prime concern in about every medical condition from patient's perspective. Cancer pain with its typical severe intense nature needs special attention and management algorithm. WHO has advised specific pain ladder for medicines to be given according to intensity during cancer pain. [59] Management of chronic pain is done using Ayurveda interventions and intensity, frequency and duration of pain episodes can be reduced. *Basti* (e.g., with *vishagarbha taila*), *shirodhara*, and *abhyanga*, *swedana* may be utilized for the management of pain. Further, these treatment measures can help to lower the intensity, frequency, and duration of pain episodes; and thus can keep patient on as low as possible on WHO pain ladder. Similarly, some well-known morphine-induced complications viz. constipation can be managed through Ayurveda. [60]

SUMMARY

Therefore, Ayurveda can play a vital role in various aspects of palliative care including nutritional support, ambulatory support, bowel management, wound care, maintenance, and development of cognitive functions, pain management, etc. Ayurveda interventions have wide scope in palliative care and management of terminally ill cancer patients with its principles and practices, for the betterment of symptoms of the disease and/or for the quality of life of such patients. This is an attempt to suggest some possible interventions by Ayurveda principles and practices for additional benefits to terminal stage cancer patients, who are being nursed currently on the basis of the allopathic tenets. More suitable and more furnished practices can be added and adapted as per the requirement which can be beneficial to concerned patients.

REFERENCES

- 1. Bhat S, Srikanth N, Singh S, Dua P, Ota S, Khanduri S, et.al. Health Care seeking Trends in Ayurveda Clinical Research Facilities: A Central Council for Research in Ayurvedic Sciences Standpoint. J Res Ayurvedic Sci, 2017; 1(3): 209-216.
- 2. World Health Organization. WHO definition of Palliative Care at the end of life. Available from: http://www.who.int/ cancer/palliative/definition/en/
- 3. Connor SR, Bermedo MCS, editor. Global Atlas for palliative care. Geneva: World 2014. Available Organization, from: http://www.who.int/nmh/Global_Atlas_of_Palliative_Care.pdf
- 4. Vaidya Jadavaji Trikamji Acharya, Charak Samhita of Agnivesa, Siddhi Sthana, Varanasi: Chaukhambha Orientalia, 2011; 708: 6 – 81.
- 5. Stroud M, Duncan H, Nightingale J. Guidelines for enteral feeding in adult hospital patients. Gut, 2003; 52(VII): vii1– vii12.
- 6. Anonymous. Cancer Pain Relief With a guide to opioid availability. Geneva: World Health Organization, 1996; 2. Available from: http://apps.who.int/iris/bitstream/ 10665/ 37896/1/9241544821.pdf
- 7. Kunte AM, Navare KS, Paradakar HS, editor. Ashtang Hridayam of Vagbhata, Sutra Sthana, Varanasi: Chaukhambha Orientalia, 2005; 1, 8 – 9: 7-8.
- 8. Patil VC, Baghel MS, Thakar AB. Assessment of Agni (Digestive function) and Koshtha (Bowel movement with special reference to Abhyantara snehana (Internal oleation). Anc Sci Life, 2008; 28(2): 26-28.

- 9. Das B. Concept of Agni in Ayurveda. Varanasi: Chaukhambha Sanskrit Series Office, 1971.
- 10. Vaidya Lakshmipati Shastri, commentator. Brahmashankar Shastri, editor. Yogaratnakar, Purvardha, Varanasi: Chaukhambha Sanskrit Sansthan, 1983; 5: 1 3..
- 11. Vaidya Jadavaji Trikamji Acharya, editor. Charak Samhita of Agnivesa, Sutra Sthana, Varanasi: Chaukhambha Orientalia, 2011; 152 27.
- 12. Ibidem. Charak Samhita of Agnivesa, Sutra Sthana, 2: 18-33, 26.
- 13. Ibidem. Charak Samhita of Agnivesa, Sutra Sthana, 2, 27 26.
- 14. Ibidem. Charak Samhita of Agnivesa, Sutra Sthana, 2: 25 26.
- 15. Ibidem. Charak Samhita of Agnivesa, Sutra Sthana, 5, 36: 3-4.
- 16. Vaidya jadavaji Trikamji Acharya, Narayan Ram Acharya, editor. Sushruta Samhita of Sushruta, Sutra Sthana, Varanasi: Chaukhambha Orientalia, 1980; 21, 5: 18 4.
- 17. Ibidem. Sushruta Samhita of Sushruta, Sutra Sthana, 37: 21 162.
- 18. Shreshtha S, Bedarkar P, Patgiri BJ, Chaudhari SY. Dhoopana Karma: A Review Through Brihatray. International Ayurvedic Medical Journal, 2017; 1(3)3: 16-25. Available from: http://iamj.in/current_issue_print/images/upload/316_325_1.pdf
- 19. Vaidya Jadavaji Trikamji Acharya, Narayan Ram Acharya, editor. Sushruta Samhita of Sushruta, Chikitsa Sthana, Varanasi: Chaukhambha Orientalia, 1980; 396: 1 4.
- 20. Ibidem. Sushruta Samhita of Sushruta, Chikitsa Sthana, 1, 401: 53-54.
- 21. Shekokar AV, Borkar KM. The Efficacy of Ayurvedic *Dhoopan* for Operation Theater Sterilization. International Journal of Advanced Ayurveda, Yoga, Unani, Siddha and Homeopathy, 2013; 2(1): 143-7. Available from: http://medical.cloud-journals.com/index.php/IJAAYUSH/article/view/Med-113/pdf
- 22. Kunte AM, Navare KS, Paradakar HS, editor. Ashtang Hridayam of Vagbhata, Sutra Sthana, Varanasi: Chaukhambha Orientalia, 2005; 52, 4: 1 9.
- 23. Bagde A, Sawant R. Adharaniya Vega Inimitable concept in extent of disease manifestation and treatment. Ayurpharm International Journal of Ayurveda and Allied Sciences, 2013; 2(11): 332-340.
- 24. Kunte AM, Navare KS, Paradakar HS, editor. Ashtang Hridayam of Vagbhata, Sutra Sthana, Varanasi: Chaukhambha Orientalia, 2005; 270: 19 9.
- 25. Vaidya Jadavaji Trikamji Acharya, editor. Charak Samhita of Agnivesa, Siddhi Sthana, Varanasi: Chaukhambha Orientalia, 2011; 682, 1: 27 31.
- 26. Ibidem. Charak Samhita of Agnivesa, Siddhi Sthana, 1, 33 683.
- 27. Ibidem. Charak Samhita of Agnivesa, Sutra Sthana, 13-14, 81-92.

- 28. Ibidem. Charak Samhita of Agnivesa, Siddhi Sthana, 1, 682: 27-28.
- 29. Ibidem. Charak Samhita of Agnivesa, Siddhi Sthana, 1: 31 682.
- 30. Ibidem. Charak Samhita of Agnivesa, Siddhi Sthana, 12: 31 729.
- 31. Ibidem. Charak Samhita of Agnivesa, Siddhi Sthana, 1, 34 683.
- 32. Vaidya jadavaji Trikamji Acharya, Narayan Ram Acharya, editor. Sushruta Samhita of Sushruta, Chikitsa Sthana, Varanasi: Chaukhambha Orientalia, 1980; 4, 531-548, 37 – 38.
- 33. Vaidya Jadavaji Trikamji Acharya, editor. Charak Samhita of Agnivesa, Siddhi Sthana, Varanasi: Chaukhambha Orientalia, 2011; 696: 3 – 45.
- 34. Ibidem. Charak Samhita of Agnivesa, Siddhi Sthana, 3, 45: 695 6.
- 35. Viswaroopan D, Shailaja U, Arun Raj GR, Jithesh Raj KT, Patil S. Ayurvedic Management of Underweight in Children at a Tertiary Care Teaching Hospital of Southern India: A Pilot Clinical Study. International Journal of Research in Ayurveda and Pharmacy, 2016; 7(4): 46-49.
- 36. Chaudhary V, Layeeq S, Bhatkoti M. Clinical Evaluation of Rajayapana Basti Administered By Classical Putaka Method and Drip Method In Parkinson's Disease. Journal of Ayurveda and Holistic Medicine, 2016; 4(2): 3-15. Available from: http:// jahm.in/index.php/JAHM/article/viewFile/454/pdf_181
- 37. Vaidya Jadavaji Trikamji Acharya, editor. Charak Samhita of Agnivesa, Siddhi Sthana, Varanasi: Chaukhambha Orientalia, 2011; 708: 6 – 83.
- 38. Vassilyadiet F, Panteliadou AK, Panteliadis C. Hallmarks in the History of Enteral and Parenteral Nutrition: From Antiquity to the Century. Nutr Clin Pract, 2013; 20, 28(2): 209-17.
- 39. Kunte AM, Navare KS, Paradakar HS, editor. Ashtang Hridayam of Vagbhata, Sutra Sthana, Varanasi: Chaukhambha Orientalia, 2005; 26, 2: 8 – 9.
- 40. Kielhorn J, Melching Kollmuß S, Mangelsdorf I. Environmental Health Criteria 235 -Dermal Absorption. Geneva: World Health Organization, 2006. Available from: https://www.who.int/ipcs/publications/ehc/ehc235.pdf?ua=1
- 41. Nagendra Prasad MN, Sanjay KR, Prasad DS, Vijay N, Kothari K, Nanjunda SS. A Review on Nutritional and Nutraceutical Properties of Sesame. J Nutr Food Sci, 2012; 2(2).Available from: https://www.omicsonline.org/a-review-on-nutritional-andnutraceutical-properties-of-sesame-2155-9600.1000127.pdf
- 42. Vaidya Jadavaji Trikamji Acharya, editor. Charak Samhita of Agnivesa, Sutra Sthana, Varanasi: Chaukhambha Orientalia, 2011; 41, 5: 57 – 63.

- 43. Vivera MJ, Gomersall JS. The effectiveness of Ayurvedic oil based nasal instillation (Nasya) medicines for the treatment of facial paralysis (Ardita): a systematic review. JBI Database System Rev Implement Rep, 2016; 14(4): 198-228.
- 44. Angadi S, Katti A, Aruna. Effect of Jatamansi Taila Nasya and Kshira dhara in Insomnia. International Journal of Health Sciences and Research, 2015; 5(11): 205-210.
- 45. Trikamji Acharya VJ, editor. Charak Samhita of Agnivesa, Sutra Sthana, Varanasi: Chaukhambha Orientalia, 2011; 42: 5 84.
- 46. Desai P, Sawarkar G, Yelne U. Managing Sleep Disorders In The Elderly With Ayurveda. International Journal of Ayurveda and Pharma Research, 2016; 4(1): 48-51.
- 47. Singh AK, Chandola HM. Shirodhara Clinical Study on Psychic Traits in Stress Induced Chronic Insomnia and its Management with Mamsyadi Ghrita and Dashamula Kwatha. Ayu, 2008; 29(1): 9-18.
- 48. Dhuri KD, Bodhe PV, Vaidya AB. Shirodhara: A psychophysiological profile in healthy volunteers. J Ayurveda Integr Med, 2013; 4(1): 40-44.
- 49. Ansari OA, Tipathi JS, Gambhir IS. Comparative clinical evaluation of Ayurvedic regimen in management of Senile dementia. International Journal of Research in Ayurveda and Pharmacy, 2013; 4(3): 307-311.
- 50. Kasture HM. Ayurvediya Panchakarma Vigyan. Nagpur: Vaidyanath Ayurved Bhavan, 1985; 6.
- 51. Vaidya Jadavaji Trikamji Acharya, editor. Charak Samhita of Agnivesa, Sutra Sthana, Varanasi: Chaukhambha Orientalia, 2011; 41, 5: 56 62.
- 52. Kasture HM. Ayurvediya Panchakarma Vigyan. Nagpur: Vaidyanath Ayurved Bhavan, 1985; 6: 121-124.
- 53. Soujanya TL, Sadanandam CH. Shirodhara The Stress Management Therapy of Ayurveda. International Ayurvedic Medical Journal, 2017; 5(3): 895-899.
- 54. Jain A. Clinical evaluation of Jatamansi Siddha Taila Shiro- Dhara on anxiety-neurosis, Journal of Ayurveda and Holistic Medicine, 2016; 4(2): 16-25.
- 55. Tripathi RD, editor. Ashtanga Sangraha of Vaghata, Sutra Sthana, Lucknow: Dnyanbharati, 1985; 40: 3 27.
- 56. Sooryavanshi S, Mardikar BR. Prevention and Treatment of Diseases of Mouth by Gandoosha and Kavala. Anc Sci Life, 1994; 13(3-4): 266-270.
- 57. Rao S, Dinkar C, Vaishnav LK, Rao P, Rai MP, Fayad R, et al. The Indian Spice Turmeric Delays and Mitigates Radiation- Induced Oral Mucositis in Patients Undergoing

- Treatment for Head and Neck Cancer. An Investigational Study. Integr Cancer Ther, 2014; 13(3): 201-210.
- 58. Srivastava A, Agarwal R, Chaturvedi TP, Chandra A, Singh OP. Clinical evaluation of the role of tulsi and turmeric in the management of oral submucous fibrosis: A pilot, prospective observational study. J Ayurveda Integr Med, 2015; 6(1): 45-49.
- 59. World Health Organization. Cancer pain ladder for adults, 2018. Available from: http://www.who.int/cancer/palliative/ painladder/en/
- 60. Ramesh PR, Kumar KS, Rajagopal MR, Balachandran P, Warrier PK. Managing Morphine-Induced Constipation: A Controlled Comparison of an Ayurvedic Formulation and Senna. J Pain Symptom Manage, 1998; 16(4): 240-244.