



DERMA –COSMECEUTICALS: APPLICATIONS IN PANCHAKARMA - A REVIEW

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ABSTRACT

Maintaining the beauty and youthfulness of our face and other body part tend to be a daily preoccupation for many women and men. Skin, particularly the face is in constant contact with the external environment and is also significantly affected by internal factors like our health and lifestyle. Age perception is based on the facial attributes such as- wrinkles, skin gravity, lustre etc. The beauty of the skin depends on the proper sleep, moisture, exercise, age, pollution, smoke, alcohol, etc. Aging of the skin is due to the deposition of free radicals. Cosmeceutical can be defined as a cosmetic product that is purported to have therapeutic action capable of affecting the skin positively beyond the time of its application. Derma-cosmeceuticals are medical-dermatological skin care products that are claimed to maintain and even improve the skin's function. *Ayurveda* cosmeceutical products already play an important role in the global industry of cosmetics and the use of *Panchakarma* in cosmeceutics made a strong stand in the cosmetic industry as well. *Panchakarma* is the complete purification of body and it is popular for cellular detoxification. It also acts like antioxidant and it reduce the inflammation by inhibiting the T cell activation. Through this literary review it has been attempted to outline the *Panchakarma* as an effective therapy in the world of cosmeceutics.

KEYWORDS – Derma-Cosmeceuticals , Ayurveda, Panchakarma

INTRODUCTION

Beauty is defined as the quality or aggregate of qualities in a person that gives pleasure to the senses or pleasurably exalts the mind or spirit. It is a quality which is not only gained by applying some products on the body¹.

Maintaining the beauty and youthfulness of our face and other body part tend to be a daily preoccupation for many women and men. Skin, particularly face is in constant contact with the external environment and is also significantly affected by internal factors like our health and lifestyle. Age perception is based on the

facial attributes such as- wrinkles, skin gravity, lustre etc. The beauty of the skin depends on the proper sleep, moisture, exercise, age, pollution, smoke, alcohol, etc. Aging of the skin is due to the deposition of free radicals. Panchakarma is the complete purification of body and it is popular for cellular detoxification. It also acts like antioxidant and it reduce the inflammation by inhibiting the T cell activation.

Cosmetology is termed as the study and application of beauty treatment, it is also preventing and overcoming skin-related disorders.

Cosmeceutical can be defined as a cosmetic product that is purported to have therapeutic action capable of affecting the skin positively beyond the time of its application. Derma-cosmeceuticals are medical-dermatological skin care products that are claimed to maintain and even improve the skin's function².

In today's era, adverse effects of cosmetics are generally encountered, 12.2% of people are suffered from adverse effects of cosmetics. Therefore, Ayurveda products are making their way in the global market of cosmetics as they are herbal plant-based and gives no side effects rather than of any chemical constituent cosmetics. Ayurveda science is not only restricted with only plant-based medications, it gives us *Panchakarma* therapies which are the essential part of Ayurveda treatment for many years, in treating various disorders to the first line of treatment. *Panchakarma* therapies attain their superiority with their efficacies.

RITU SHODHANA

Vamana can be done in *Kapha* and *pitta* vitiated conditions³, if the skin problems are associated with hormonal issues like PCOD, in recurrent skin diseases and in association of *Bahudosh Lakshana*. *Vamana* Removes vitiated *Kapha* and *Pitta* and it does the *Srothomukha vishodhana*. *Vamana karma* cleanses the *Annavaha srotas* by washing out the endotoxins.

Virechana balances *Pitta* and *Rakta dushti*⁴. *Sharngadhara* describes *virechana* as *Vayasthairya*⁵. *Vayasthairya* can be compared to free radical scavenging activity. *Virechana* helps to flush out the endotoxins. Thereby helps to reduce the formation of free radicals. Hence it will decrease the level of oxidative stress which is the main reason for tissue damage and aging.

BASTHI

Basthi works best on skin and promotes the health of skin. There are *Basti* formulations which are explained to have cosmetic effect, few examples that are frequently used in clinical practice are, *Varnya Basti*⁶, *Madhutailika basti*⁷, *Ardhamatrika Basti*⁸.

Varnya Basti is mentioned under *Sidhistana* of *Charaka Samhita*. The main ingredients are *ksheera* (2 *prastha*), *Madhu* (1 *prastha*), *Taila* (1 *prastha*), *Ghrita* (1 *prastha*). The combination of milk, oil, ghee and honey helps in mitigating morbid *Vata* and *Pitta*, restores skin nutrition, cleanses the body, and improves complexion.

Madhutailika basti is one of the *Asthapana Basti*. *Basti* prepared from *madhu* (honey) and *taila* (oil) in equal quantity is termed as '*Madhutailika Basti*'. The main constituent of this *Madhutailika basti* is honey (*madhu*)

and sesame oil (tila taila). *Madhu* is *yogavahi* (drug carrier) in nature due to which it spreads to minute channels (*sukshma srotas*) and increases potency of *basti*. Tila taila is *snigdha* (unctuous), *madhura* (sweet) and *ushna* (hot) in nature. It reduces *laghu* (light to digest) and *ruksha* (dry) properties of *vata*. As this *basti* reaches microchannels and does liquefaction of *doshas*, it produces *balya*, *varnya*, *deepana* and *brimhana* effects.

Ardhamaatrika Basti mentioned by *Kaviraaja Vangasena* is having *Vatahara* and *Shoolahara* properties. As it a variety of *Basti* possess half the dosage of maximum permissible dosage for *Niruha Basti*, it can be administer daily even after having food, without any fear of complications, even to *Sukumara*, *Vridha*, *Stree* and those who have fear towards the procedures, so it can be given to enhance the complexion.

Basti has an action on ENS which in turn affects the endocrine system as well. This also helps to exert a positive effect on the skin.

NASYA

Nasya can be classified into two types. *Pratimarsha* and *Marsha*. Out of these *Pratimarsha Nasya* can be used daily and will be beneficial for promoting skin health and *Marsha Nasya* will be better for pathological conditions.

Taila which can be used for *pratimarsha nasya* are *Anutaila*⁹, *Ksheerabala taila*¹⁰, *Kumkumadi taila*¹¹, *Yashtimadhu taila*¹². According to *Vangasena* *Pratimarsha Nasya* with *Tila Taila* for 1 week cures *Mukhadooshika*¹³.

There is a wide range of medicines for *marsha Nasya* explained in classics and also which has been proved in researches. For example, *Nasya* with *Mandukaparni Swarasa* and *Madhu*¹⁴ in *Mukhadooshika*, *Nasya* with *Kumkumadi Ghrita*¹⁵ in *Vyanga*, *Manjishtadi tailam in mukhadushika*¹⁶, *Kumkumadi Taila Nasya in vyanga*¹⁷, *Kanaka Taila Nasya in vyanga*¹⁸.

5. RAKTAMOKSHANA

In *Tvakvikara* with *Pitta* and *Rakta* involvement *Rakthamokshana* can be done. Types and indications

Acc.to Acharya Vagbhata and Susruta In *Vyanga*- *Siravyadha* has to be done in *Lalata Pradesha*, where temporal and frontal veins are found¹⁹, and in *Mukhadooshika Jaloukavacharana*²⁰ can be done.

Vangasena, *Chakradatta* and *Bhaishajya ratnavali* also describes the same.

6. BAHIRPARIMARJANA CHIKITSA

6.1 ABHYANGA

Abhyanga is told to be *Tvakdardhyakara*²¹. It maintains the skin barrier, helps to reduce TEWL, helps to maintain the moisture balance. It promotes elastin, laminin and collagen synthesis thereby prevents sagging and finelines. It also improves microcirculation, Improves tone and lift the muscles.

Some of the *Thaila* which are indicated for *Abhyanga* are Ksheerabala taila²², Chandanadi taila²³, Dineshavalayadi keram/taila²⁴, Eladi keram/taila²⁵, Kumkumadi tailam²⁶, Haridradya Taila²⁷, Kanaka Tailam²⁸, Manjishtadya Taila²⁹, Panchanga kumkumadi taila³⁰, Saptatrimshanga kumkumadya taila³¹.

6.2 SWEDANA

Shastika Shali Pinda.Sweda (Varnya kizhi)³² and Kukkutanda sweda³³ are the varieties of snigdha sweda which are very useful in dry skin and melisma. Choorna Pinda Sweda³⁴ Ushma sweda are the varieties of ruksha sweda which can be used in case of blind pimples, black heads, comedones etc.

6.3 PRAKSHALANA

In oily and acne prone skin Triphala Kashaya or Ushnajala with Tanka bhasma can be used. In sensitive skin and rosacea condition, Manjishta kashaya, Yashtimadhu Kashaya Panchavalka Kashaya, Aloe Water can be used because it helps to relieve the *Prakupita Pitta*. In case of dryness and reduced glow Rice water (which contains Kojic acid), Atasi jala, Dasha Moola kashaya can be used as it helps to decrease the *Rukshata*.

6.4 UDWARTANA/ UTSADANA

Utsadana³⁵ is the procedure of rubbing medicated powders by mixing with snehadrava. It can be done in case of dry skin by using Yashtimadhu choorna, Vacha choorna, Arjuna tvak choorna, Manjishta choorna etc. Udvartana is the procedure where medicinal powders are rubbed as it is. It can be done in oily skin, by using Nimba churna, Triphala churna etc.

These procedures help in the exfoliation of dead skin cells.

Dead skin cells accumulation can clog your skin pores and causes pimples, dry skin, rough patches, irritation, and inflammation

Better to be avoided in case of active acne because it may cause acne to break and leads to scar formation.

6.5 LEPA

Single drug

In Dry skin - *Ghratakumari*, *Atasi*, *Annalepa*, can be done. *Raktacandana*, *Manjishta*, *Yashtimadhu* can be used with milk/oil as base.

In oily skin *Masura*, *Raktacandana*, *Manjishta*, *Yastimadhu* with water as base can be used.

Jathiphala lepa- Acharya Bhavamishra have mentioned *Jatiphala* (*Myristica fragrans* Houtt.) as a single herbal remedy for its action on *Vyanga*³⁶.

Lepa with 2 drugs

- **Gorochanadi lepa**- *Gorochana*+*Maricha*³⁷ is indicated in mukhadooshika <sh.utt.11>

- **Arkaksheera lepa-** Arkaksheera + Haridra³⁸ is also used in mukhadoshika.<sh.utt.11>
- **Mukhavarnyakara lepa-** Masura grinded with milk and applied, this paste enhancing complexion in seven days³⁹. <va.kshu>

Lepa including Rasa oushadhi

- **Matulungadilepa-**Matulunga (*Citrus medica*), Ghruta, Manashila (Reagler)-- Pitika (Pimples) Vyanga(Melasma)⁴⁰ <sh.utt.11>
- **Twak-Savarnikaran Yoga-**Kaliyaka (*Coscinium fenestratum*), Agar (Aquilaria agallocha Roxb.), Aamrasthi, Hema, Kanta (*Rubia cordifolia* Linn.) and Rasottama (Parada) mixed with Goshakrit rasa is Varnya⁴¹.< Ch.Chi- 25/116>
- Grinding Lodhra, Kumkuma, Manjistha, Loha, Kaliyaka, Yava, Tandula and Yashtimadhu with water and apply over the skin⁴².<Garuda purana>

Lepa with multiple drugs.

a) For curative purpose

1. **Raktachandanadilepa-**Raktachandana (*Pterocarpus santalinus*) Manjistha (*Rubiocordifolia*) Lodhra (*Symplocosracemosa*) Kustha (*Sassurealappa*) Priyangu (*Callicarpa macrophylla*) Vatankura (*Ficus bengha-lensis*) Masur daal (*Lens culinaris*)-Vyangahara, Mukhakantikara⁴³<sh.utt.11>
2. **Lodhradilepa-**Lodhra (*Symplocosracemosa*), Dhanyaka (*Coriander sativum*), Vacha (*Acorus calamus*) mixed in equal quantity –Tarunya pidika⁴⁴ <sh.utt.11>
3. **Vatapatradi lepa** –Ripened leaves of Vata, Malati, Raktachandana, Kushta, Kaliyaka, Lodhra - Tarunyapidikavyanganilikadivinashanam⁴⁵<sh.utt.11>
4. **Dhanyakadi lepa** -Dhanyaka (*Coriandrum sativum* Linn), Vacha (*Acorus calamus* Linn), Lodhra (*Symplocos racemosa* Roxb), Kushta (*Sassuria lappa* C.B. Clarke). Mukhadoshika⁴⁶<A.h.u.32/31>
5. **Varnya gana lepa**⁴⁷

b) For promotive purpose

In Garuda purana⁴⁸ there is a wide range of lepa. By applying Atasi, Masha, Godhuma and Pippali choorna along with ghee, the body will become like Kandarpa. Grinding Lodhra, Kumkuma, Manjistha, Loha, Kaliyaka, Yava, Tandula and Yashtimadhu with water and apply over the skin. Grind dry Haridra, Shvetasarshapa, Mulaka, Matulunga beeja and apply it for a week, the body is refined. By applying these lepa it is told that- Kandarpa Bhavati (skin will become like shining star)

In *Haramekhala Tantra*⁴⁹ also there is mentioning of varieties of *Shareeralavanyartha lepa*. *Haridra choorna* is mixed with water and made into bolus-*Putapaka* is done and applied over face. *Tila*, *Sarshapa*, *Haridra*, *Daruharidra* and *Kushta* mixed with water and applied. *Vidanga*, *Nimbapatra*, *Dadimavrikshatvak*, *Shirishatvak*, *Priyanguphala*, *Haridra* along with water.

Chakradatta⁵⁰ and Haramekhala⁵¹ have mentioned Varnaka Ghrita for shareera lavanya. The ingredients are almost similar. Ingredients of *Varnaka ghrita* in *Chakradatta* are *Madhuka*, *Raktachandana*, *Sarshapa*, *Padmaka*, *Haridra*, *Lodhra*, *Kesara*, *Ghrita*, *Sikta*. In Haramekhala Tantra the ingredients are *Madhuka*, *Kumkuma*, *Sarshapa*, *Padmaka*, *Peetachandana*, *Lodhratvak*, *Haridra*, *Ghrita*.

DISCUSSION

Cosmetology is one of the major emerging branches of science gaining attention of researchers, industry and general public all around the globe. Ayurveda can serve the society with its time-tested knowledge of natural, safe, effective and holistic techniques of cosmetology. Smooth and glowing complexion of the face amplify the magnificence of a person and also gives self confidence, irrespective of the skin colour.

New age beauty standards have gone through a major shift. The main aim of any skincare routine is to rejuvenate your skin from deep within and to accentuate the beauty are naturally blessed with. An Ayurvedic/herbal cosmetic have growing demand in the world market.

CONCLUSION

Ayurveda always have attracted considerable attention because of its effectiveness and comparatively lesser or no side effects in comparison with other drugs. According to Ayurveda, toxic materials inside the body makes a person look unhealthy and his personality weakens.

Shodhana (Purification) is the best therapeutic intervention to eliminate body toxins which helps to become disease free and along with other *Bahya chikitsa* helps to maintain health and beauty.

REFERENCE

1. <https://www.dictionary.com/browse/beauty> (accessed)
2. Pandey A, Jatana GK, Sonthalia S. Cosmeceuticals. [Updated 2023 Aug 7]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK544223/>
3. Charak Samhita, Kalpasthana ¼. Prof. Ravidatta Tripathi, Chaukhamba Sanskrit Pratishthan, Reprint, 2009.
4. Ravidutt Tripathi Panchakarmayasisidhi Adhaya.(ed). Charak Samhita, Reprint Edition ed. New Delhi :Chaukhamba Sanskrit Pratisthan; 2013. pp. 890.
5. Dr. Brahmanand Tripathi editor Sharandhara Samhita of Pa. Sharandharacharya annotated with Dipika Hindi commentary, Uttarkhanda 4/1-7, Chaukhamba Surabharati Prakashan, Varanasi, 2006:342-343

6. Agnivesha, Charaka Samhita; Pandit Kashinath Shastri and Dridhabala by Pt Kashinath Shastri and Gorakhnath Chaturvedi, Reprint 2009, published by Chaukhambha Bharati Academy, Varanasi. Siddisthana 9/7, p1053.
7. Sushruta, Dalhana, Gayadasa, Chikitsasthana 38/98-99. In Acharya YT (Edi.). Sushruta Samhita with Nibandasangraha, Nyayachandrika Commentary. Reprint Edition 2008. Varanasi: Chaukhamba Sanskrit Sansthan, 537.
8. Dr. Indradev Tripathi, Chakrapani Virachita Chakradatta with commentary Vaidyaprabha, Edited by Prof. Ramanath Dwivedy, 8th Ed, varanasi, chaukhambha Sanskrit bhavan, 2022.
9. Ashtang Hridya (composed by Vagbhata with commentary by Kaviraj Atridev Gupta, edited by Vd. Yadunandan Upadhyay), sutra sthana chapter 20/23,33 published by Chaukhambha Sanskrit sansthan, Varanasi 14th edition, 2003;129
10. Vd. Harish Chandra Singh Kushwaha, editor, Charaka Samhita, Varanasi: Chaukhambha Orientalia; 2016. Vol II, Chikitsa Sthana, chapter 29, verse 119-120.
11. Gupt K. A. Editor, Ashtang Hriduya of Vagbhata. Vidyotini Hindi commentary. Vol.-2 Uttartantra chapter 32 verse 27-30). Edition 3. Varanasi; Chaukhamba Prakashan, 2011; 566.
12. Agnivesa. Charaka Samhita. Elaborated by Charak and Dradhbala with Ayurved Deepika Commentary by Shri Chakrapanidutta, (Ed): Vaidya Yadavji Trikamji Acharya, Prolouged by: Prof. R.H. Shingh. Chaukhambha Subharati Prakashan. Reprinted 2011
13. Vangasena. Vangasena Samhita. Edited by Saxena N. Varanasi; Chowkhamba Sanskrit Series Office; First Edition : 2004. Volume 2. Kshudraroga, 67/50. P.806. PP.1327
14. https://www.researchgate.net/publication/347623298_A_study_on_effect_of_Nasya_Karma_and_Thiladilepa_in_treatment_of_Yuvana_Pidaka_Acne_vulgaris_-_A_Case_Report_Introduction
15. https://www.researchgate.net/publication/332185886_CONCEPTUAL_STUDY_OF_NASYA_WITH_KUMKUMADI_GRUTA_IN_MUKHADUSHIKA_ACNE_VULGARIS
16. Ambika Dutt Shastri, Sushruta Samhita, Vol-I, Chikitsasthana, Delhi; Chaukhambha Sanskrit Sansthan, 2013, P-25.
17. Gupt K. A. Editor, Ashtang Hriduya of Vagbhata. Vidyotini Hindi commentary. Vol.-2 Uttartantra chapter 32 verse 27-30). Edition 3. Varanasi; Chaukhamba Prakashan, 2011; 566.
18. THE ROLE OF TRANS-NASAL ADMINISTRATION IN THE MANAGEMENT OF HYPERPIGMENTATION -A CASE STUDY Section A -Research paper. DOI: 10.48047/ecb/2022.11.11.49
19. Acharya Yadavaji Trikamaji Suśrta Samhitā with Dallaṇa Tīkā, (ed), Chaukhamba Prakashana, Varanasi; 2004. Chapter no.13, Nidansthana, Verse no.43-45.
20. Sushrut Samhita, Ayurda Datattvasan Dipik With Ayurveda Datattvasan Dipika, Publisher Chaukhambha Sanskrit Sanstan, Varnansi, Edition 2010, Sushrut Sutrasthan Chapter 13, Page No. 56 To 60
21. Vagbhata, Astanga Hridayam, Vol.I. Srikanta Murthy KR, editor. 2nd ed. Krishnadas Academy; 1994. Sutrasthan, 22/24

22. Vd. Harish Chandra Singh Kushwaha, editor, Charaka Samhita, Varanasi: Chaukhamba Orientalia; 2016. Vol II, Chikitsa Sthana, chapter 29, verse 119-120.
23. Nishtashwar, Vidyanath. Sahasrayoga (English) 1st ed. Varanasi: Chowkamba Sanskrit Series Office, 2006.
24. Nishtashwar, Vidyanath. Sahasrayoga (English) 1st ed. Varanasi: Chowkamba Sanskrit Series Office, 2006.
25. Nishtashwar, Vidyanath. Sahasrayoga (English) 1st ed. Varanasi: Chowkamba Sanskrit Series Office, 2006.
26. Gupt K. A. Editor, Ashtang Hriduya of Vagbhata. Vidyotini Hindi commentary. Vol.-2 Uttartantra chapter 32 verse 27-30). Edition 3. Varanasi; Chaukhamba Prakashan, 2011; 566.
27. Dr. Indradev Tripathi, Chakrapani Virachita Chakradatta with commentary Vaidyaprabha, Edited by Prof. Ramanath Dwivedy, 8th Ed, varanasi, chaukhambha Sanskrit bhavan, 2022.
28. Dr. Indradev Tripathi, Chakrapani Virachita Chakradatta with commentary Vaidyaprabha, Edited by Prof. Ramanath Dwivedy, 8th Ed, varanasi, chaukhambha Sanskrit bhavan, 2022.
29. Dr. Indradev Tripathi, Chakrapani Virachita Chakradatta with commentary Vaidyaprabha, Edited by Prof. Ramanath Dwivedy, 8th Ed, varanasi, chaukhambha Sanskrit bhavan, 2022.
30. Dr. Indradev Tripathi, Chakrapani Virachita Chakradatta with commentary Vaidyaprabha, Edited by Prof. Ramanath Dwivedy, 8th Ed, varanasi, chaukhambha Sanskrit bhavan, 2022.
31. Dr. Indradev Tripathi, Chakrapani Virachita Chakradatta with commentary Vaidyaprabha, Edited by Prof. Ramanath Dwivedy, 8th Ed, varanasi, chaukhambha Sanskrit bhavan, 2022.
32. Charaka Samhita of Agnivesha, revised by Charaka and Dhridhabala with Ayurveda-Dipika Commentary by Chakrapanidatta and with Vidyotini hindi commentary by pt. Kashinath Shastri, edited by Dr. Gangasahaya Pandey, Varanasi, Chaukhamba Sanskrit Academy, reprint edition, part 1, Sutra Sthana 14/41, 2012; 203.
33. https://www.researchgate.net/publication/361250085_Comparative_Study_of_Arjun_Twak_Lepa_and_Arjun_Twak_Kukkutand_Pottali_in_Management_of_Vyanga_with_Special_Reference_to_Melasma_An_Update
34. Charaka Samhita of Agnivesha, revised by Charaka and Dhridhabala with Ayurveda-Dipika Commentary by Chakrapanidatta and with Vidyotini hindi commentary by pt. Kashinath Shastri, edited by Dr. Gangasahaya Pandey, Varanasi, Chaukhamba Sanskrit Academy, reprint edition, part 1, Sutra Sthana 14/41, 2012; 203.
35. Vagbhata, Ashtang Hriday, Arundatta's commentary – Sarvangasundar, Uttar Tantra Chi.25/46, page 864
36. Bhishagratna Bhrahmashankarmishr Shastri. Bhavaprakash Chikitsa Prakaran 8/61/32-43
37. Gangadhar Sathe ,Sharangadhar samhita,4thedition,Raghuvanshi prakashan.
38. Gangadhar Sathe ,Sharangadhar samhita,4thedition,Raghuvanshi prakashan.
39. Dr. Indradev Tripathi, Chakrapani Virachita Chakradatta with commentary Vaidyaprabha, Edited by Prof. Ramanath Dwivedy, 8th Ed, varanasi, chaukhambha Sanskrit bhavan, 2022.

40. Gangadhar Sathe ,Sharangadhar samhita,4thedition,Raghuvanshi prakashan.
41. Charaka Samhita of Agnivesha, revised by Charaka and Dhridhabala with Ayurveda-Dipika Commentary by Chakrapanidatta and with Vidyotini hindi commentary by pt. Kashinath Shastri, edited by Dr. Gangasahaya Pandey, Varanasi, Chaukhamba Sanskrit Academy, reprint edition, part 1, cikitsa sthana 25/116, 2012; 1004.
42. A Jayanti bhattacharya “Garud puran ki darshanik avam ayurvedic samagri ka Adhyayan” Varanasi Sanskrit sansthan first edition 1986 siddha yoga adhaya pg number 207
43. Gangadhar Sathe ,Sharangadhar samhita,4thedition,Raghuvanshi prakashan.
44. Jayanti bhattacharya “Garud puran ki darshanik avam ayurvedic samagri ka Adhyayan” Varanasi Sanskrit sansthan first edition 1986 siddha yoga adhaya pg number 207
45. Gangadhar Sathe ,Sharangadhar samhita,4thedition,Raghuvanshi prakashan.
46. https://www.researchgate.net/publication/356641136_A_CLINICAL_STUDY_TO_EVALUATE_A_N_EFFECT_OF_DHANYAKADI_LEPA_AS_-_BAHIRPARIMARJANA_CHIKITSA_AND_CHANDANA_CHURNA_WITH_MADHU_AS_AN_THAPARIMARJANA_CHIKITSA_IN_YAVANAPIDAKA
47. Pallavi G, Gupta KL, Shreevathsa M, Chate VA, Balakrishna DL. Clinical evaluation of Varnya Gana Lepa in Vyanga (melasma). Ayu. 2015 Apr-Jun;36(2):151-6. doi: 10.4103/0974-8520.175543. PMID: 27011715; PMCID: PMC4784124.
48. Jayanti bhattacharya “Garud puran ki darshanik avam ayurvedic samagri ka Adhyayan” Varanasi Sanskrit sansthan first edition 1986 siddha yoga adhaya pg number 207
49. Shatry K. Sambashiva., editor. *printed by the Superintendent*. 280. Vol. 5. Trivandrum: Government press; 1938. Hamekhala by Mahuka; p. 88. [Google Scholar] Jayanti bhattacharya “Garud puran ki darshanik avam ayurvedic samagri ka Adhyayan” Varanasi Sanskrit sansthan first edition 1986 siddha yoga adhaya pg number 207
50. Dr. Indradev Tripathi, Chakrapani Virachita Chakradatta with commentary Vaidyaprabha, Edited by Prof. Ramanath Dwivedy, 8th Ed, varanasi, chaukhambha Sanskrit bhavan, 2022.
51. Shatry K. Sambashiva., editor. *printed by the Superintendent*. 280. Vol. 5. Trivandrum: Government press; 1938. Hamekhala by Mahuka; p. 88. [Google Scholar]