www.jahm.in
(ISSN-2321-1563)

REVIEW ARTICLE

REVIEWING DANTA GATA (DENTAL) VISHA CHIKITSA IN PRESENT DAY ORO-DENTAL DISEASES- AN AYURVEDA CONCEPT

RAVI DHALIYA[1] KSHAMA MUTALIK[2] SWATHI SHARMA[3]

ABSTRACT

The oral cavity is prone for a countless of changes with the exposure to several kinds of factors like alcohol, tobacco and betel nut consumption, environmental and lifestyle related factors in our day to day life. Oral mucosal lesions, Gingivitis and Periodontitis occur as a result of infections, local trauma or irritation, systemic diseases and excessive consumption of tobacco, betel nut and alcohol. Other etiologies like contact allergic stomatitis are with aromas and preservatives present in dental preparations and food items according to the various study results. Inflammation is a local reactive change that involves the release of antibacterial agents from nearby cells that defend the host against infection. It also facilitates early tissue healing and repair. The Inflammatory process significantly affects the periodontium. Agada tantra is one branch of Ayurveda which deals with the management of various ill effects of visha (poison) ranging from Sthavar visha (plant poison) to jangama visha (animal poison). Visha (poisoning) in any form to the oral cavity can be understood under the topic *Danta gata visha.* In present day these chemicals can be considered as *Gara Visha* (poison) and visha chikitsa can be applied to these entities. Hence, this article is an attempt to appraise the drugs and procedures explained for *Danta Gata Visha* (toxins induced oro-dental diseases).

KEYWORDS – *Chikitsa, Danta Gata Visha, Gara visha* , Gingivitis, Oral Health, Tobacco.

[1,3] PG Scholar, Dept. of Agada Tantra, KLEU's BMK Ayurveda college, Belgaum, INDIA

[2] PG Scholar Dept. of Rasashastra and Bhaishajya Kalpana, BMK Ayurveda college, Belgaum, INDIA

Corresponding Email id: drravidhaliya@gmail.com Access this article online: www.jahm.in

INTRODUCTION

Dental diseases are a significant public health burden in India, with dental caries affecting 60 to 65 percent and periodontal diseases affecting an estimated 50 to 90 percent of the general population, depending on age, with research suggesting that higher rates of dental diseases occur in rural areas.[1] Dental diseases in rural India are primarily due to socio-cultural factors, such as the inadequate or improper use of fluoride products and a lack of knowledge about oral health and hygiene.[2] Other causes like Bleach and peroxide are commonly used as whitening agents in commercial toothpaste. Both bleach and peroxide can be an irritant to the mouth and skin in small doses. The major components of the whitening toothpaste include surfactants, polyphosphates, and enzymes. Abrasive agents are the primary stain removal ingredient present in these toothpaste.[3] A number of chemicals used by dental surgeons can cause burns of the oral mucosa i.e trichloroacetic acid used in the treatment of pericoronitis, others are hydrogen peroxide, aspirin, potassium chloride tablets, tetracyclines, toothaches solutions containing menthol, phenol, and chloroform.[4] Another harmful agent which effecting on oral health care is tobacco products and alcohol are well documented. These include both common and rare conditions and diseases such as staining or discoloration of teeth, halitosis, mouth ulcer, periodontal disease, caries, candidosis, oral mucosal disease including smoker's melanosis, smoker's palate, potentially malignant lesions and oral cancer.[5] Nowadays many mortalities are happening due to oral cancer, which during the initial stage starts with oral pathologies like Gingivitis caused by poisoning response to nicotine (a toxic substance in tobacco) and N-nitroprusemide.[6]

Oral pathology:

Inflammation represents a protective response designed to rid the body of the initial cause of cell injury. The inflammatory process extensively affects the periodontium. Plaque biofilm releases a variety of biologically active products as gram-positive and gram-negative bacteria colonize the tooth surface around the gingival margin and interproximal areas[7]. These molecules break in the gingival epithelium and initiate a host response that eventually results in gingivitis. Evidence of this can be seen clinically with changes in tissue color from pink to red, swelling, and bleeding upon probing[8].

As the biofilm continues to proliferate, soluble compounds penetrate the sulcular epithelium. This, in turn signals the gingival epithelium to produce chemical mediators including interleukin–1 beta (IL-1,), prostaglandins, tumor necrosis factor alpha (TNF-α), and matrix metalloproteinases[9].

These products recruit neutrophils to the area and influence chemotaxis. As the inflammatory process progresses, additional mediators are produced, and more cell types are recruited to the area including neutrophils, T-cells, and monocytes. The process of gingivitis is represented in Figure 1.

Dental hygiene debridement and regular home oral hygiene care could return the gingival tissues to a state of health. When periodontal treatment is performed and clinical inflammation decreases, the serum levels of these inflammatory mediators also decrease[10].

Figure 1: Mediators and cells present in established gingivitis

Current significance of *Gara visha* in oro dental pathology*:*

According to *Ayurveda Visha* is classified into two *Akratrima visha (Natural poisons)* and *kritrima visha (Artificial),* while *Kritirma visha are nothing but* Man-made by combining toxic or non-toxic substances to yield a harmful substance. These substances are called as *Gara Visha*[11]. In *Ayurveda,* the specific drugs and procedures which are described for the management of *Visha* are called as *Visha Chikitsa*. *Gara visha* is nothing but the purposely planned poisoning in olden days to kill the enemies. The *Gara visha* a type of poisoning usually given through food which may be intentional[12] but, it is also clearly mentioned that other than *anna (food)* and *pàna (drinks),* a variety of medium such as, *abhyanga taila* (massaging oils), *danta kashtha* (toothbrushes), *vastra* (cloth), *abharana* (ornaments), *paduka* (footwear) etc. are mode of poisoning and are capable of producing many diseases.[12] All the drugs and therapies explained under the heading of garavisha & dushivisha chikitsa aim to remove *visha* (toxins/poison) from the the body & detoxifies the body.

Present lifestyle and addictions has landed us in exposure to chemicals which are harmful locally and systematically. The oral cavity is one which mostly suffers from the above factors. To overcome such

consequences conventional methods also proving harmful. *Acharyas* of *Ayurveda* have told Management for the diseases caused due to chemicals under the heading of *GARA VISHA* which have lesser complication and easily accessible.

DANTA KASTHA GATA VISHA LAKSHANA –

When *Danta kastha* (tooth brush) , *jihva nirlekhana* (tongue cleaner), *kaval* (mouth gargles) are get poisoned, it gives rise symptoms like swelling of the tongue, gums, lips and muscular tissue .[13],[14]. These symptoms can be correlated with present day chemical induced oral allergic reactions like contact allergic stomatitis are with aromas and preservatives present in dental preparations and food items, mouth ulcer, periodontal disease, Gingivitis caused by poisoning response to nicotine smoker's melanosis, smoker's palate etc.

***Danta Kastha Gata* (oro- dental) *Visha Chikitsa* In Ayurveda –**

Its Special Management explained are :

विशीर्यते कूर्चकस्तु दन्तकाष्ठगते विषे ।
जिह्वादन्तौष्ठमांसानां श्वयथुश्चोपजायते ।।
अथास्य धातकीपुष्पपथ्याजम्बूफलास्थिभिः ।
सक्षौद्रैः प्रच्छिते शोफे कर्तव्यं प्रतिसारणम् ।।
अथवाऽङ्कोठमूलानि त्वचः सप्तच्छदस्य वा ।
शिरीषमाषका वाऽपि सक्षौद्राः प्रतिसारणम् ।। [13]

If poison applied over tooth stick, then it loses its bristles. If this poisoned tooth stick being used then it produces selling of the tongue, teeth, gums & lips. Then the swelling should be *Prachana* (incision) & the paste of *Dhataki Pushpa, Pathya, Jambuphala* added with honey or paste of *Ankotha, Satpachada* or seeds of *Sirish* with honey should be *Pratisarna* (rubbing) over the affected gums.

1.First step – "Pracchana" – It is one of the methods of Bloodletting- Multiple superficial incisional lines are done over the inflamed gums.

2.Second step- "Pratisarna" –After pracchana, the drugs told below are made into choorna (powder) and is massaged (rubbed) along with honey over the inflamed gums. The drugs can be used in combination or as a single drug along with honey.

***DOSHAGHNATA & KARMUKTA OF THE DRUGS*:**

The six Specific drugs have been told for ***Danta Gata Visha Chikitsa*** (Management) are *Dhataki, Pathya, Jambu, Ankotha, Saptacchada & Shirisha along with* Honey.

According to various *Ayurvedic* texts, *Doshaghnata* & *Karmukta* of these drugs are listed in below table.

Table Showing the pharmacological & therapeutic properties of herbs according to various Ayurvedic text.[15],[16],[17],[18],[19],[20]

S no.	Sanskrit name (Latin name)	Official part to be used	*Doshaghnata* (pharmacological properties)	*Karmukta* (therapeutic properties)
1.	*Dhataki* (*Woodfordia fruticosa*)	*Pushpa* (flowers)	*Kapha – pitta shamaka*	*Vrana ropana* (wound healing), *Sthambana, Vishaghna, Krimighna*
2.	*Pathya* (*Terminalia chebula*)	*Phala* (fruits)	*Tridosha shamaka*	*Vrana Shodhana* (wound cleanser) *Vrana ropana* (wound healer), *Rasayana* (antioxidant)
3.	*Jambu* (*Syzygium cumini* linn)	*Phala* (fruit nuts)	*Kapha–pitta shamaka*	*Krimighna* (raaj nighntu)
4.	*Ankotha* (*Alangium salvifolium*)	*Moola* (root)	*Kapha–pitta shamaka*	*Vishaghna, Shoola hara, Shoth hara* (anti-inflammatory), *krimighna* (bhavParakasha)
5.	*Saptacchada (Alastonia scholaris)*	*Twak* (bark)	*Kapha–pitta shamaka*	*Krimighna*, *Vrana Shodhana* (wound healing)
6.	*Shirisha (Albizia lebbeck)*	*Beeja* (seed)	*Tridosha shamaka*	*Vishaghna*, Stambhana, *Dantadardhyakara* (tooth strengthener), *Shotha hara* (anti inflammatory), *Vedanasthapana* (analgesic), *Raktastambhaka*

Efficacy of *Danta Gata Visha Chikitsa* in oral diseases -

***A.PRACCHANA* (*Rakta-Mokshana*- Blood Letting*)*-**

Pracchana is multiple superficial incisional lines over the infected area. Bloodletting therapy is one of the typical Shodhana procedures in *Ayurveda*. *Rakta-mokshana* means to let out the *Dooshitharakta* (vitiated

blood). When there is localized disease (*eka desha*) vitiation of rakta, Siravyadha or Pracchanna are to be adopted for letting out the blood[22]. *Pracchana* is also indicated when there is stasis or clotted blood[21]. The symptoms of samyak siravedha are *Laghavam* (lightness), *Vedanashanti* (pain reduction) & *bleeding* stops by itself. It means the pain arising from a disease condition get subsided followed by decrease in the symptoms of the disease. Hence bloodletting should be used in swelling & pain predominant diseases.

Probable Mode Of Action Of Blood Letting -

Bloodletting therapy is clinically applied by pricking over pathological response points or superficial veins on the human body with an aseptic surgical needle in Chinese traditional therapy (CTH). This causes bleeding and helpful in alleviating pain, activating blood flow, eliminating blood stasis and diminishing the inflammation. Mechanism can be summed up as follows [23]:

a.) Bloodletting therapy can accelerate the metabolism & stimulate the medullary hematopoiesis via neurohumoral regulation. This improves the microcirculation and vascular functions. By improving the microcirculation, it can inhibit excessive inflammatory reactions and promote the recovery.

b.) Good analgesia. While pricking, algogenic substances such as prostaglandin E_2 (PGE_2) may be discharged and the pain will be eased.

c.) Improvement of human immunity and activation of immune defense functions in the body.

Probable Mode of Action Of These Drugs –

A. **Anti-Bacterial & Anticaries Properties :**

A. The flower of ***Dhataki*** **(***Woodfordia fruticosa*) was evaluated for the potential antibacterial property. The flowers of this plant possess high content of tannins and they have astringent, styptic, antihelmintic, antibacterial properties.[24]

B. The aqueous extract of ***Pathya*** *(Terminalia chebula)* is proved as an anticaries agent. *Terminalia.chebula* of 10% concentration of the extract in the form of a mouthwash was an effective anticaries agent[25]. In another study, the acetonic extract of ***Pathya*** *(T. chebula)* exhibited growth inhibitory activity against two dental caries *S. mutans* and *S. aureus* compared to other tested extracts.[26]

C. In an open placebo-controlled study ***Saptacchada*** (Alstonia scholaris) showed satisfactory results in dental caries. The latex treatment proved effective compared to the placebo group.[27]

D. The antibacterial properties of Honey were assessed by comparing the zones of inhibition resulting from the culture of S.

mutans, P. gingivalis, and L. acidophilus in the presence of either honey or various antibiotics. Honey draws moisture out of the environment and thus dehydrates bacteria. Second, the pH of honey is between 3.2 and 4.5, and this acidity is low enough to inhibit the growth of most microorganisms. data suggested that topical application/chewing of honey might help prevent Gingivitis and caries in patients undergoing orthodontic treatment[28].

B. Analgesic & Anti-Inflammatory-

1. The higher dose of ***Dhataki*** (*Woodfordia fruticosa* flowers) *i.e*. WFM-600, showed maximum anti-inflammatory activity at late phase (42%) but this activity was less than that of *Woodfordia fruticosa* flowers (WFM-400) at both early and late phase. The standard Diclofenac-10 showed maximum activity at early phase (59%, $p < 0.01$) [29].

2. ***Jambu*** *(S. cumini)* seed extract, possessing significant anti-inflammatory activity. This may be due to the presence of triterpenoids, saponins, and tannins which deserve further studies to establish its therapeutic value as well as its mechanism of action.[30]

3. ***Ankotha*** *(Alangium salviifolium)* root has good anti-inflammatory actions when compared with Diclofenac sodium *Alangium salviifolium* root gave significant percent inhibition of the maximal paw edema and very highly significant percent inhibition of total paw edema during 6 h.[31].

4. ***Saptacchada*** (*Alstonia scholaris)* contains alkaloids like, picrinine, vallesamine, and scholaricine which produce anti-inflammatory and analgesic action.[32]

5. The flowers of ***Shirisha*** *(Albizia lebbeck)* showed reasonable antipyretic, analgesic and anti-inflammatory activities. The best extract which showed anti-inflammatory activity was the dichloromethane extract with 71.6% followed by the ethyl acetate extract with 60.3% inhibitors.[33]

6. Honey may possess anti-inflammatory activity and stimulate immune responses within a wound[34],[35]. Honey reduces the activities of cyclooxygenase-1 and cyclooxygenase-2, thus showing anti-inflammatory effects[36].

C. Antiulcer -

1. Chloroform and methanolic extract of root of *Woodfordia fruticosa* were investigated by Mihira and co-worker in diclofenac sodium-induced gastric ulcer and compared with ranitidine in female wistar albino rats at concentrations of 150 mg/kg. methanolic extract was found the most potent anti-ulcer drug in comparison to chloroform extract and standard[37].

2. ***Shirisha*** *(Albizia lebbeck)* Was Found To Having Good Antiulcer Property. The Effect Of The Alcoholic Extract Of The Albizia Lebbeck

Bark Doses 200 Mg/Kg, 400 Mg/Kg Showed Significant Effect, When Compared With The Control May Be The Presence Of Saponin Contents In The Bark Extract.[38]

3. ***Saptacchada*** (Alstonia scholaris) was evaluated for anti-ulcer activity (34) by pyloric ligation method. The animals treated with the extract did not show ulcer, whereas the ulcer score was found to be significantly high ($p<0.01$) in rats administered diclofenac sodium[39].

D. Anti-Allergic –

1. Anti-Allergic activity of the ***Jambu*** (*Syzygium cumini Linn*) extract was observed by the inhibition of edema formation, mast cell degranulation, and histamine release as well as the inhibition of eosinophil accumulation and IL-5 production[40].

E. Anticancer

1. ***Ankotha*** *(Alangium Salvifolium) proved* Antitumor effect in Ehrlich ascites carcinoma bearing swiss mice. And significantly reduced tumor growth, viability of tumor cells, normalized the hematological iles, raising life span as compared with those EAC control mice[41].

2. Honey has also been used in the palliative care of various cancers like in radiation-induced mucositis, radiotherapy, and chemotherapy-induced skin reactions and wounds[42]. Tualang honey has a promising antiproliferative and apoptotic effect on OSCC and HOS cell lines. Early apoptosis could be attributed, in part, to its ability to inhibit proliferation[43].

F. Antioxidant-

1. Natural **Honey** contains many flavonoids (such as apigenin, pinocembrin, kaempferol, quercetin, galangin, chrysin, and hesperetin), phenolic acids (such as ellagic, caffeic, p-coumaric and ferulic acids), ascorbic acid, tocopherols, catalase, superoxide dismutase, reduced glutathione, Maillard reaction products and peptides. Most of the above compounds work together to provide a synergistic antioxidant effect[44].

G. Immune-Modulating Activity -

1. ***Shirish*** (A. lebbeck) treated mice developed higher serum antibody titers compared to the vehicle treated group. Delayed type hypersensitivity response was suppressed in SRBC immunized mice treated with A. lebbeck extract. The macrophage migration index remained unaltered in both mice and rats. These results are discussed in the light of possible immunopotentiating effects of A. lebbeck[45].

2. The immunostimulating effect of ***Saptacchada*** (Alstonia scholaris) bark extracts was studied in BALB/c mouse by Iwo et al (28). The aqueous extract at 100 mg/kg b.w. increased lytic activity of peritoneal exudate cells against Escherichia coli. The aqueous extract at 50 mg/kg b.w. induced the cellular

immune response while at 100 mg/kg b.w. inhibited the delayed type of hypersensitivity reaction[46].

DISCUSSION

Herbal medicines have been used for many years. Due to various acute and chronic exposure to tooth whitening chemicals & oral use of tobacco, bettle nut etc, leads to inflammation and secondary infection of gums, hence the line of treatment to such entities According to *Ayurveda* is *shodhana* (expelling) of *visha* (poison) and *shamana* (neutralize) of the *visha* with *vishaghna* drugs. In *Ayurvedic Samhita's*, the general management of *Mukha roga* (oral diseases), *Pracchana* (*Raktamokshana*- blood letting) with multiple superficial incision lines and *Pratisarana (*rubbing with herbal coarse powder*)* procedure are explained for the removal of vitiated *doshas* from the *rakta* (blood). Therefore *Dushita* (vitiated) *Rakta* from the related *Siras* (veins) should be let out to remove the disease. From modern studies bloodletting therapy has been studied in many inflammatory conditions. During the inflammatory process, multiple systems such as nervous, endocrine and immune systems participate in healing. The nervous system and endocrine system transmit a message to the immune system via transmitters and hormones, and the immune system regulates the nervous and endocrine system. Hence, theses three nervous-endocrine-immune system together participates in the regulatory mechanism of bloodletting therapy.

Drugs which are explained in *visha* condition are having high potency and fast acting to fight the state. When we analyze the above drugs, all are *kapha* & *pitta hara*, & having properties like - *Vrana ropana (wound healing)*, *Shothahara (anti inflammatory)* , *sthambana*, *krimighna (anti helminthic)* and *Vishaghna* (anti poisonous) properties. These drugs are even proved as Anticaries, Anti-Allergic, Anti-inflammatory, Antitumor effect, as antimicrobial plaque agents, for preventing the release of histamine, as antioxidants, antifungals, and analgesics properties because of the Phytochemicals present in it. They also aid in healing and are effective in improving immunity. These all highlights the potential of *Danta Gata Visha Chikitsa* in Present Day Oral Diseases.

CONCLUSION

A vast number of plants which are explained in *Ayurveda* in the management of *visha (poisoning condition)* have not been studied for clinical validation. Understanding the etiology of any disease is of prime importance to start specific treatment. *Visha chikitsa* as per *Ayurvedic* text should be studied in present era where diseases related to toxins are increasing. Thus the Procedures & the drugs which are explained in *Visha* induced

Danta diseases (dental diseases due to chemical toxins) should be potentially tried in toxins/chemical induced dental problems as well as an oral mucosal lesion.

REFERENCES

1. Shawn Lin & Allison Mauk. Oral Health: Addressing Dental Diseases in Rural India. http.//www.ictph.org.in. Accessed on: 29/04/2015.
2. Petti , Panfili Pierluigi, Simonetti D'Arca Adele. Oral hygiene, sucrose consumption and dental caries prevalence in adolescent systemic fluoride non-users. Community Dent Oral Epidemiol. 1997;25:334–336
3. Weinert W. Oral hygiene products. In: Wiley VC, editor. Ullmann's Encyclopedia of Industrial Chemistry. Vol. 18. Weinheim:Wiley VCH; 2005. p. 209‑15.
4. Andrijana Bakula, Liborija Lugović-Mihić, Mirna Šitum, Juraj Turčin And Ana, Contact Allergy In The Mouth: Diversity Of Clinical Presentations And Diagnosis Of Common Allergens Relevant To Dental Practice, Šinković Acta Clin Croat 2011; 50:553-56.
5. Reibel J. Tobacco and oral diseases. Update on the evidence with recommendations. Medical Principles and Practice 2003;12 Suppl 1:22-32.
6. (http://www.buzzle.com/articles/diseases-caused-by-tobacco.html)
7. Kornman KS, Page RC, Tonetti MS. The host response to the microbial challenge in periodontitis: assembling the players. Periodontol 2000 1997; 14:33-53.
8. Armitage GC. Diagnosis of periodontal diseases. J Periodontol 2003; 74; 1237-47.
9. Scannapieco FA: Periodontal inflammation: from gingivitis to systemic disease? Compend Cont Educ Dent 2004; 25 (7) (Suppl 1): 16-25.
10. D'Aiuto F, Parkar M, Andreou G, et al. Periodontitis and systemic inflammation: control of the local infection is associated with a reduction in serum inflammatory markers. J Dent Res 2004; 83:156-60.
11. KRS Murthy (translator), Ashtanga hrdayam of Vaghbhata, Uttara Sthana; chapter 35, verse 5-6. second edition. Varanasi: Chowkhambha Sanskrit Series, 2006;.329.
12. jadvji trikamji acharya (editor), Commentary: Nibandhasangraha of sri Dalhanacharya on Susrutasamhita of Susruta, Kalpasthana, chapter 1, verse 24-27. edition:reprint 2014. varanasi: Chowkhambha Sanskrit sansthan,2014;560.
13. jadvji trikamji acharya, (editor), Susruta samhita of Susruta, Kalpasthana, chapter 1, verse 48-50. edition:reprint 2014. varanasi: Chowkhambha Sanskrit sansthan,2014;562.
14. ram karan Sharm, (translator), caraka samhita of Agnivesa, chikitsa sthana; visha chikitsa: chapter 23, verse 16. Third edition . Varanasi: Chaukhambha publication,2002;354-355.
15. Sribhava Misra, Bhavaprakash, Edited By Sri Brahmasankara Misra, First Part, Tenth Edition . Chaukhambha Sanskrit Sansthan.:2002: 109.
16. PV Sharma, dravyaguna-vijnana, Vol II , reprint: 2005 chaukambha bharati academy Varanasi. 2005: 754-756.
17. PV Sharma, dravyaguna-vijnana, Vol II , reprint: 2005. chaukambha bharati academy Varanasi. 2005: 659-661.
18. PV Sharma, dravyaguna-vijnana, Vol II , reprint: 2005. chaukambha bharati academy Varanasi. 2005: 779-781.
19. PV Sharma, dravyaguna-vijnana, Vol II , reprint: 2005. chaukambha bharati academy Varanasi. 2005: 702-704.
20. PV Sharma, dravyaguna-vijnana, Vol II , reprint: 2005. chaukambha bharati academy Varanasi. 2005: 73-775.
21. K. R Srikantha Murthy (translator) Susruta samhita of Susruta, Sarira sthana; siravyadhavidhisariram

:chapter 8, verse 26. (second edition) varanasi: Chowkhambha Sanskrit sansthan,2004;139.

22. KRS Murthy, (translator), Ashtanga hrdayam of Vaghbhata, Sutra Sthana; shastravidhimadhyayam: chapter 26, verse 53. second edition. Varanasi: Chowkhambha Sanskrit Series, 2004;.307.
23. Pend-dian chen, gui-zhen chen,yun-xiang xu.Study strategies for bloodletting therapy in treatment of acute soft tissues injuries,journal of Chinese integrative medicine,March 2011, vol.9, no. 3.
24. Anjaria, J.; Parabia, M.; Dwivedi, S.; (2002). Ethnovet heritage Indian ethnoveterinary medicine An Overview,; Pathik Enterprise, Ahmedabad (Gujarat), India)
25. Jagtap AG, Karkera SG. Potential aqueous extract of Terminalia Chebula as an anticaries agent. J Ethnopharmocol 1999;68:299-306.
26. Kamal Rai Aneja, Radhika Joshi, Evaluation of antimicrobial properties of fruit extracts of Terminalia chebula against dental caries pathogens, Jundishapur Journal of Microbiology (2009); 2(3): 105-111.
27. Meghnandini khandare, efficacy of saptaparna leaf and stem latex on krumidanta shool (pain due to dental caries): A randomized comparative open placebo controlled clinical trial,International journal of oral & maxillofacial pathology.2013; 4 (2) :58-60.
28. AL-Dany A. Atwa et al. Effect of honey in preventing gingivitis and dental caries in patients undergoing orthodontic treatment. The Saudi Dental Journal (2014) 26, 108–114.
29. Yogesh Baravalia; Yogeshkumar Vaghasiya; Sumitra Chanda. Brine Shrimp Cytotoxicity, Anti-inflammatory and Analgesic Properties of Woodfordia fruticosa Kurz Flowers. ServicesIranian Journal of Pharmaceutical Research (2012), 11 (3): 851-861.
30. A. Kumar, R. Ilavarasan, T. Jayachandran1 , M. Deecaraman1, R. Mohan Kumar3, P. Aravindan1, N. Padmanabhan1 and M. R. V. Krishan1, Anti-inflammatory activity of Syzygium cumini seed, African Journal of Biotechnology Vol. 7 (8), pp. 941-943, 17 April, 2008.
31. Hindustan Abdul Ahad et al, Phytochemical screening and anti-inflammatory actions of Alangium salviifoliumroot extract, Natural Product Research: Formerly Natural Product Letters Volume 26, Issue 17, 2012.
32. Arulmozhi,papaya mitra mazumder, purnima, ashok. sathiya narayanan.antinociceptive and anti inflammatory activities of Alstonia scholaris linn.R.br. pharmacognosy Magazine 3(10) in press article 2007.
33. G. S. Duncan, S. H. Peers, F. Carey, R. Forder and R. J. Flower, “Calcium Antagonistic and Antiarrhythmic Ac- tions of CPU-23, a Substituted Tetrahydroisoquinoline,” British Journal of Pharmacology, Vol. 109, No. 1, 1993, pp. 113-119.
34. Medhi B, Puri A, Upadhyay S, Kaman L. Topical application of honey in the treatment of wound healing: a meta analysis. JK Sci . 2008;10:166–169.
35. Tonks AJ, Cooper RA, Jones KP, Blair S, Parton J, Tonks A. Honey stimulates inflammatory cytokine production from monocytes. Cytokine. 2003;21:242–247.
36. Markelov VV, Trushin MV. Bee venom therapy and low dose naltrexone for treatment of multiple sclerosis. Nepal J Neurosci . 2006;3:71–77.
37. Mihira V, Ramana KV, Ramakrishna S, Rambabu P. Evaluation of Anti-Ulcer Activity of Woodfordia fruticosa Roots. Pharmanest 2011; 2(2-3):158-60.
38. R. Naga Kishore Et Al, Investigation Of Anti-Ulcer Activity Of Alcoholic Extract Of Bark Of Albizia Lebbeck On Pyloric Ligated Rodent Model, International Journal Of Pharmaceutical And Chemical Sciences, Vol. 3 (3) Jul-Sep 2014.
39. Bhanu Pratap*, G.S.Chakraborthy, Nandini Mogha. Complete Aspects Of Alstonia Scholaris.

International Journal of PharmTech Research. Jan-Mar 2013 .Vol.5, No.1, pp 17-26.

40. F.A. Brito, L.A. Lima, M.F.S. Ramos, M.J. Nakamura, S.C. Cavalher-Machado, A.C. Siani, M.G.M.O. Henriques and A.L.F. Sampaio, Pharmacological study of anti-allergic activity of Syzygium cumini (L.) Skeels, Braz J Med Biol Res, January 2007, Volume 40(1) 105-115.
41. Ronak zahan, et all, anticancer activity of alangium salvifolium flower in ehrlich ascites carcinoma bearing mice, International journal of cancer research 7(3): 254-262,2011.
42. Bardy J, Slevin NJ, Mais KL, Molassiotis A: A systematic review of honey uses and its potential value within oncology care. J Clin Nurs. 2008, 17 (19): 2604-2623.
43. Abdulmlik A Ghashm et all, Antiproliferative Effect Of Tualang Honey On Oral Squamous Cell Carcinoma And Osteosarcoma Cell Lines BMC Complementary And Alternative Medicine 2010, 10:49, Published: 14 September 2010.
44. Johnston JE, Sepe HA, Miano CL, Brannan RG, Alderton AL. Honey inhibits lipid oxidation in ready-to-eat ground beef patties.Meat Sci. 2005 Aug; 70(4):627-31.
45. Barua CC, et al. Immunomodulatory effect of albizzia lebbeck. Pharm Biol. 2000;38(3):161-6.
46. M.I. Iwo, A.A. Soemardji, D.S. Retnoningrum and U.M. Sukrasno. Immunostimulating effect of pule (Alstonia scholaris L. R.Br., Apocynaceae) bark extracts. Clin Hemorheol Microcirc. 23(2-4): 177-83 (2000).

Cite this article as: Ravi Dhaliya, Kshama Mutalik, Swathi Sharma. Reviewing Danta Gata (Dental) Visha Chikitsa in present day oro-dental diseases- An Ayurveda concept, *J of Ayurveda and Hol Med (JAHM)*.2017;5(1):30-41

Source of support: Nil

Conflict of interest: None Declared.