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DRUGS USEFUL IN DENTAL DISEASES: A REVIEW

Gupta Chandni*[1], Srivastava Rashmi[2] and Sharma Sonia[3]

[1]Lecturer, P.G. Deptt. of Dravyaguna, R.G.G.P.G.AYU. College, Paprola.

[2]Sr. Lecturer, P.G. Deptt. of Dravyaguna, R.G.G.P.G.AYU. College, Paprola.

[3]Lecturer, P.G. Deptt. of Samhita and Siddhant, R.G.G.P.G.AYU. College, Paprola.

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***Corresponding Author**
Dr. Gupta Chandni
Lecturer, P.G. Deptt. of Dravyaguna,
R.G.G.P.G.AYU. College,
Paprola.

ABSTRACT

The Mukha (Oral cavity) is considered to be one of the most important part of the Urdhwajatru because it work as the reflector of the body health by acting as gateway of the alimentary canal. Oral diseases continue to be a major health problem world-wide. The modern medical science had only limited success in the prevention of periodontal disease and in the treatment of a variety of oral diseases. **Aim & objective:** The main objective of this review article is to discuss the therapeutic uses of Ayurvedic herbs which are described in texts for different types of Mukharoga on the basis of Ayurvedic as well as modern parameters. **Basis of evidence:** author taken detail review of available data for more than 2000 herbs and collected various references /research work done on these herbs through latest available studies. The subject material has also been searched on internet. And concluded. **Central Message:** There is an ample scope in Ayurveda to manage diseases of oral cavity. Total 57 herbs which are having significant role in treating mukharoga, are concluded in this paper. **Conclusion: t**he present scientific evidence based review is focused on the possible role of Ayurveda in the management of various dental disorders.

KEYWORDS: Mukha, urdhwajatru, khadira, vidanga.

INTRODUCTION

The Mukha (Oral cavity) is considered to be one of the most important part of the Urdhwajatru because it work as the reflector of the body health by acting as gateway of the alimentary canal. Sushruta classified the disease of Mukha, according to the seven sub sites. The diseases of Aushta, Danta, Dantamula, Jihwa, Talu, Kantha and Sarvasar[1] are included

in the affections of the buccal cavity. Herbs may be good alternatives to current treatments for oral health problems. However, as yet there is lack of information about the effect of herbs in oral tissue, mechanism of action and side effects. Herbal products have comparatively fewer side effects and are safer to use than conventional medicines particularly if use topically as poultice, pastes, cream, liniments, ointments, gargles or mouth wash[2] . There is an urgent need for use of evidence based herbal medicine and to evaluate their efficacy and safety in the treatment of oral diseases. Clinical trials of many herbal products are being undertaken and published each year [3] but controlled trials are scarce. Herbs may be good alternative to current treatments for oral health problems. However, as yet there is lack of information about the effect of herbs in oral diseases. This review article provides useful information on the use of herbs in the prevention and treatment of oral diseases.

MATERIAL AND METHODS

Data collection: The data collection for the present review was collected from various, Ayurvedic texts especially Charaka Samhita[4], Susruta Samhita[5], Ashtanga Hridya[6], Chakradatta (c.d.)[7], various nighantus and dravyaguna vigyana[8] of Acharya P.V. Sharma. Some of the medicinal plants mentioned in Ayurvedic texts which are used in the prevention and treatment of oral disease are-

S.No.	Drug	Botanical Name	Family	Part Used	Reference
1.	Arimeda	Acacia farnisiana	Fabaceae	Tvaka, sara	Ch. Ch. 26/206-14; p-
2.	Amlaki	Emblica officinalis	Euphorbiaceae	Phala	Su.ch.22/24-25;p-123
3.	Arjuna	Terminalia arjuna	Combretaceae	Tvaka	Ch.su.5/73;p-125
4.	Arka	Calotropis procera	Asclepiadaceae	Ksheera, patra, pushpa, moola tvaka	Ch.su.5/73;p-125
5.	Asana	Pterocarpus marsupium	Fabaceae	Kandsara, niryasa	Ch.su.5/73;p-125
6.	Ashwatha	Ficus reliogiosa	Moraceae	Tvaka, phala, shunga, ksheera	Su.ch.22/17-18; p-123
7.	Babula	Acacia arabica	Fabaceae	Tvaka, phala, niryasa	B.P.N[9]. vatadi varga 37; p-517
8.	Bakula	Mimusops elengi	Sapotaceae	Tvaka, pushpa, phala	B.P.N[9]. pushpa varga 33; p-481
9.	Chandana	Santalum album	Santalaceae	Kandasra, taila	A.h.ut.22/34-35; p-853
10.	Dugdhika	Euphorbia thymifolia	Euphorbiaceae	Panchanga	RM.5/14; G.N.3/5/100

11.	Dalchini	Cinnamomum zeylanicum	Lauraceae	Tvaka, taila, patra	A.h.ut.22/29-30; p-153
12.	Eranda moola	Ricinus communis	Euphorbiaceae	Mula, patra, beeja, taila	Su.ch.22/11-12;p-124
13.	Gorakhamundi	Sphaeranthus indicus	Compositae	Panchanga	A.h.ut.22/29-30; p-153
14.	Gojihva	Onosma bracteatum	Boraginaceae	Patra, pushpa	Su.ch.22/11-12;p-123
15.	Gokshura	Tribulus terrestris	Zygophyllaceae	Phala, moola	A.h.ut.22/15; P-852
16.	Haritaki	Terminalia chebula	Combretaceae	Phala	Su.ch.22/24-25;p-123
17.	Heenga	Ferula narthex	Umbelliferae	Niryasa	Su.ch.22/11-12;p-124
18.	Jati	Jasminum officinale	Oleaceae	Patra, moola, pushpa	Su.ch.22/11-12;p-122
19.	Jambu	Syzigium cumini	Myrtaceae	Phala,phalasthi tvaka, leaves	R.N[10].Parpatadi varga 85; p-121
20.	Jatiphala	Myrstica fragrans	Myristicaceae	Beeja, kosha	Cs.su.5/76-77; p-123
21.	Kakodumbar	Ficus hispida	Urticaceae	Phaltvaka, phala, ksheera	Su.ch.22/11-12;p-123
22.	Kankola	Piper cubeba	Piperaceae	Phala	R.n.[10] chandanadi varga 79-80; p-411
23.	Kantakari	Solanum surra ttense	Solanaceae	Panchnga	A.h.ut.22/15; P-852
24.	Karanja	Pongamia pinnata	Fabaceae	Tvaka, patra, beeja	Ch.su.5/73;p-125 Su.ch.24/6,7; p-131
25.	Kakjhangha	Peristophe bicalyculata	Acanthaceae	Panchanga	Cd. 10/14 p- 95
26.	Kumuda	Nymphoea nouchali	Nymphoeaceae	Moola, pushpa, beeja	A.h.ut.22/15; P-852
27.	Karpura	Cinnamomum camphor	Lauraceae	Niryasa	Cs.su.5/76-77; p-123
28.	Khadira	Acacia catechu	Fabaceae	Tvaka, sara	Su.ch.24/6,7; p-131
29.	Kushtha	Saussurea lappa	Asteraceae	Moola	Su.ch.22/11-12;p-124
30.	Laksha	Laccifer lacca	Lacciferidae	Niryasa	Su.ch.22/18;p-123
31.	Lavanga	Syzigium aromaticum	Myrtaceae	Pushpakalika	Cs.su.5/76-77; p-123
32.	Lodhra	Symplocos racemosa	Symplocaceae	Tvaka	Su.ch.22/14-15;p-123
33.	Mogra	Jasminium sambac	Oleaceae	Pushpa	A.h.u.22/107 p-857

34.	Maricha	Piper nigrum	Piperaceae	Phala	Su.ch.22/25; p-123
35.	Madhuka	Madhuca indica	Sapotaceae	Phala, beeja, taila	Su.ch.24/6,7; p-131
36.	Madhuyashti	Glycyrrhiza glabra	Fabaceaea	Moola	Su.ch.22/14-15;p-123
37.	Nagarmotha	Cyperus rotundus	Cyperaceae	Kanda	Su.ch.22/11-12;p-122
38.	Nyagrodh	Ficus bengalensis	Moraceae	Ksheera, phala, patra	Su.ch.22/17-18; p-123
39.	Nimba	Azadirachta indica	Meliaceae	Phala, patra,	Su.ch.24/6,7; p-131
40.	Parisha	Thespesia populnea	Malvaceae	Tvaka	Su.ch.22/25; p-123
41.	Patola	Trichosanthus dioica	Cucurbitaceae	Patra	A.h.ut.22/106; P-854
42.	Pippali	Piper longum	Piperaceae	Moola, phala	Su.ch.22/11-12;p-122
43.	Plaksha	Ficus lacor	Moraceae	Tvaka	Su.ch.22/17-18; p-123
44.	Priyangu	Callicarpa macrophylla	Verbenaceae	Pushpa	C.d.56/11 p-325
45.	Patanga	Caesalpinia sappan	Fabaceaea	Sara	Su.ch.22/18;p-123
46.	Sariva	Hemidesmus indicus	Asclepiadaceae	Moola	Su.ch.22/11-12;p-122
47.	Shati	Hedychium spicatum	Zingiberacea	Rhizome	D.N.[11] guduchyadi varga 60-61; p-25
48.	Shunthi	Zingiber officinale	Zingiberaceae	Rhizome	Su.ch.22/11-12;p-122
49.	Sarshpa	Brassica compestris	Cruciferae	Oil	Su.ch.22/11-12;p-122
50.	Tila	Sesamum indicum	Pedaliaceae	Beeja, beeja taila	A.h.ut.22/14; P-850
51	Tejovati	Zanthoxylum armatum	Rutaceae	Bark, fruit	Ch.ch. 26/190; p-752
52.	Tvaka	Cinnamomum zeylanicum	Mouth refereshing	Leaves	Ch.chi.8/137-38;p-297
53.	Udumbar	Ficus glomerata	Moraceae	Latex	Su.ch.22/18;p-123
54.	Vata	Ficus bengalensis	Moraceae	Latex	Su.ch.22/18;p-123
55.	Vetas phala	Salix caprea	Salicaceae	Bark, flower	Su.ch.22/11-12;p-122
56	Vibhitaka	Terminalia bellirica	Combretaceae	Fruit	Su.ch.25;p-123
57.	Vidanga	Embelia ribes	Myrsinaceae	Fruit	Su.ch.22/11-12;p-124

S.No.	Drug	Rasa	Guna	Vipaka	Veerya	Chemical composition	Uses
1.	Arimeda	Tikta, kashya	Laghu, ruksha	Katu	Sheeta	Tannin	Dantashodhana
2.	Amlaki	Pancharasa (lavana varjita)	Guru, ruksha, sheeta	Madhura	Sheeta	Tannins in fruit such as gallic acid, elagic acid, glucose, 28% tannins in fruit 22% in leaves	Sheetada
3.	Arjuna	Kashaya	Laghu, ruksha	Katu	Sheeta	B-sitosterol in bark, elagic acid, arjunic acid, arjunetin fridelin	Dantashodhanartha
4.	Arka	Katu, tikta	Laghu, ruksha, tikshna	Katu	Ushna	Uscherin, calotropin, calotoxin	Dantashodhanartha
5.	Asana	Kashaya, tikta	laghu, ruksha	Katu	Sheeta	Kino-tannic acid 70-85%, pyro-catechin, gallic acid, pectin	Dantashodhanartha
6.	Ashwatha	Kashaya, madhura	Guru, ruksha	Katu	Sheeta	4% tannins	Dantashoola
7.	Babula	Kashaya	Guru, ruksha	Katu	Sheeta	12-19% tannins Ca,Mg,Babul bark is bitter and acrid	Dantakrimi
8.	Bakula	Kashaya	Guru	Katu	Sheeta	3-7% tannins	Dantdaurbalaya, dantachalana, puyadanta
9.	Chandana	Tikta, madhura	Laghu, ruksha,	Katu	sheeta	Santalol, volatile oil	Dantashoshira
10.	Dugdhika	Katu, tikta madhura,	Guru, ruksha, tikshna	Katu	ushna	Cymol, carvacrol, limonine	Krimidanta
11.	Dalchini	Katu, tikta	Laghu, ruksha, tikshana	Katu	Ushna	Cinnamaldehyde, eugenol	Dantadadyakara
12.	Eranda moola	Madhura, kashaya	Snighdha, tikshna, sukshma	Madhura	Ushna	Fixed oil 37-61%, ricn, ricinine	Dantaroga
13.	Gorakhamundi	Tikta, katu	Laghu, ruksha	Katu	Ushna	Sphaeranthine and glucoside, oil contain eugenol	Dantaroga
14.	Gojihva	Madura, tikta	Laghu, snigdha	Madhura	Sheeta	Mucinous agent, Na, K, Ca, Mg	Upkusha
15.	Gokshura	Madhura	Guru, snigdha	Madhura	Sheeta	Fixed oil, tannin, glycoside, sterol, nitrate	Dantanadi

16.	Haritaki	Pancharasa (lavana varjita)	Laghu, ruksha	Madhura	Ushna	Tannins such as chebulagic acid, chebulinic acid, corilagin	Mukharoga
17.	Heenga	Katu	Laghu, snighdha, tikshna	Katu	Ushna	Asaresinotannol, disulphide	Krimidanta
18.	Jati	Kashaya, snigdha	Laghu, snighdha	Katu	Ushna	Tannins, salicylic acid, jasmine alkaloid	Dantashoola, dantadaurbalya
19.	Jambu	Kashaya, madhura, amla	Laghu, ruksha	Katu	Sheeta	Jambolie, cyanidine diglycosides, β-sitosterol, elagic and gallic acid	Dantaroga
20.	Jatiphala	Tikta, katu	Laghu, tikshna	Katu	Ushna	Protein, starch, fixed oil, myristicin	Dantashodhanartha
21.	Kakodumbar	Tikta, kashaya	Ruksha, laghu	Katu	Sheeta	Tannins, glycosides, saponins	Upkusha
22.	Kankola	Tikta, katu	Laghu, ruksha, tikshna	Katu	Ushna	Cubebic acid, cubebol, cubebin	Dantamanjanartha
23.	Kantakari	Tikta, katu	Laghu, ruksha, tikshna	Katu	Ushna	Potassium nitrate, sulphate, diosgenin	Krimidanta, dantashoola
24.	Karanja	Tikta, katu, kashaya	Laghu, tikshna	Katu	Ushna	Pongamia oil, karanjin, pongamol	Dantashodhana
25.	Kakjhangha	Tikta, kashya	Laghu, ruksha	Katu	Sheeta	Potassium, rutin and rotenoid	Krimidanta
26.	Kumuda	Madhura, kashyaya, tikta	Laghu, snigdha, pichila	Madhura	Sheeta	Gallic acid, tannic acid, carbohydrate	Dantabhagna
27.	Karpura	Katu, tikta, madhura	Laghu, tikshana	Katu	Sheeta	90% alcohol	Dantapuya, dantashoola
28.	Khadira	Tikta, Kashaya	Laghu, ruksha	Katu	Sheeta	Catechin, Catechu or cutch (extract) catechu, tannic acid.	Dantadhawana, dantarogo main manjanartha
29.	Kushtha	Tikta, katu, madhura	Laghu, ruksha	Katu	Sheeta	Tannins resinoid, saussurine	Dantashoola
30.	Laksha	Kashaya	Laghu, snigdha	Sheeta	Anushna	Jalaric ester	Krimidanta, dantasharkara
31.	Lavanga	Katu, tikta	Laghu, snigdha	Katu	Sheeta	Volatile oil	Dantadaryakara
32.	Lodhra	Kashaya	Laghu, ruksha	Katu	Sheeta	Loturine, colloturine,	Dantachala

						loturidine	
33.	Mogra	Kashaya	Laghu	Katu	Sheeta	50-70% gallotannic acid	Dantadardyakara
34.	Maricha	Katu	Laghu, tikshana	Katu	Ushna	Ca,P,piperine, piperidine, chavicin	Dantashoola, krimidanta
35.	Madhuka	Madhura, Kashaya	Guru, snighdha	Madhura	Sheeta	Flowers contain sugar 2.2%, cellulose, albuminoid	Dantadhavnartha
36.	Madhuyashti	Madhura	Guru, snigdha	Madhura	Sheeta	Glycyrrhizin, liquiritin, isoliquiritin	Shoshira, dantaveshta
37.	Nagarmotha	Katu, tikta, kashaya	Laghu, ruksha	Katu	Sheeta	Oil in rhizome 0.5-0.9%	Dantakrimi
38.	Nyagrodh	Kashaya	Guru, ruksha	Katu	Sheeta	10% tannin in bark	Danta shola, sheetada
39.	Nimba	Tikta, kashyay	Laghu	Katu	Sheeta	Margosa oil contain bitter substances nimbin, nimbidin and nimbidol, a paraffin alcohol	Dantakrimi
40.	Parisha	Kashaya	Laghu, ruksha	Katu	Sheeta	7%tannins in bark and heart wood	Shoshira
41.	Patola	Tikta, madhura	Laghu, ruksha	Katu	Ushna	Protein, carbohydrate	Dantashodhanartha
42.	Pippali	Katu	Laghu, snigdha, tikshana	Madhura	Anushna sheeta	Piperine, piplartine, sesamine, piplasterol	Adhimansa
43.	Plaksha	Kashaya	Guru, ruksha	Katu	Sheeta	Flavonoids, lupeol,β sitosterol	Mukhapaka, dantashoola
44.	Priyangu	Tikta, kashaya, madhura	Guru, ruksha	Katu	Sheeta	Aromatic oil, hydrocyanic acid	Spongy gums
45.	Patanga	Kashaya, tikta, madhura	Ruksha	Katu	Sheeta	Brazilin, brazilien, tannin 40%	Dantaveshata
46.	Sariva	Madhura, tikta	Guru, snigdha	Madhura	Sheeta	p-methoxy salicylic aldehyde, b-amyrins, lupeol, tannins etc.	Shoshira
47.	Shati	Katu, tikta, kashaya	Laghu, tikshna	Katu	Ushna	4% volatile oil, 52% carbonic acid	Dantaroga
48.	Shunthi	Katu	Laghu, snigdha	Madhura	Ushna	Ca, P, Cl, zingiberene,	Dantaroga

						zingiberol, gingerol, shogaol	
49.	Sarshpa	Tikta, katu	Ruksha, tikshna	Katu	Ushna	Sinalbin, phosphorus, compounds K, Mg and Ca – phosphate	Dantapuya
50.	Tila	Madhura, Kashaya, tikta	Guru, snigdha	Madhura	Ushna	Sesameline, sesamine, protein, carbohydrate	Dantadardyakara, dantachala
51	Tejovati	Tikta, katu	Laghu, ruksha, tikshna	Katu	Ushna	Tannin, saponin, salvadorin, trimethylamine	Dantashoola
52.	Tvaka	Tikta, madhura	Laghu, tikshna, rukksha	Katu	Ushna	Cinnamaldehyde, eugenol	Danvairasya nashaka
53.	Udumbar	Kashaya	Guru, ruksha	Katu	Sheeta	14% tannins. Phosphorus, silica	Dantashoola
54.	Vata	Kashaya	Guru, ruksha	Katu	Sheeta	10 tannins	Dantashoola
55.	Vetas phala	Kashaya, tikta	Laghu	Katu	Sheeta	Delphidinine, cyanidine, salicyline, glycoside etc.	Upkusha
56.	Vibhitaka	Kashaya	Laghu, ruksha	Madhura	Ushna	21.4% tannins in fruit, β- sitosterol, gallic acid	Krimidanta
57.	Vidanga	Kashaya, katu	Laghu, ruksha, tikshna	Katu	Ushna	Embelin, tannin, christembine	Krimidanta, dantashoola

DISCUSSION

Among these above mentioned plants, maximum plants contain tannins and tannic acid. Such a tannic acid is generally obtained from nutgalls of oak. Tannins are found in tea, catechur, nutmeg, betel nut etc. tannic acid and tannins are astringents which precipitate proteins, but do not penetrate cells, thus affecting the superficial layer only. They toughen the surface making it mechanically stronger and decrease exudation. They denature proteins forming protein tannate. These are used in bleeding gums as glycerine of tannic acid. Alcohols such as ethanol and methanol are also good astringent at 50-90% concentration, hence used in dental disorders.

From above description we can classify the the drugs useful for oral hygiene into two groups-

1. Dantashodhana dravya
2. Dantadardyakara dravya

Dantashodhana dravya- The drug which cleanses the teeth is known as dantashodhana drug. By chewing the sticks of the dantashodhana dravyas the impurities of the teth are removed. The rasa of these drugs is katu and tikta which normalizes the avarana buta vitiated kapha. Inspite of these properties the dantashodhana dravyas possess antimicrobial property which destroy the microbes situated particularly in that area e.g. karanja, neem, karveera etc.

Dantadardyakara dravya- The drug which makes the teeth stronger is known as dantadardyakara drug. These drugs generally belongs to kashyaya skandha and due to their sankochaka action they make the teeth stronger. Inspite of these properties these drugs also act as styptics and also check the bleeding of gums.

CONCLUSION

In present scenario if people will use above mentioned herbs for preventive as well as curative aspect, they definitely get better results as compare to modern medications. The use of these herbal extracts in the form of chewing sticks, tooth pastes, mouth rinses and gum is entirely consistent with the primary health care approach principles and in particular that of a focus on prevention, community participation and the use of appropriate technology. Future studies should be focused on mode of action of active constituents of these plants.[12]

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