Original Article   **www.wjahr.com**

A CLINICAL STUDY ON THE MANAGEMENT OF DANTVESHTA (PYORRHEA ALVEOLARIS) WITH VAJRADANTA MANJANA AND VIDANGADI GUGGULU

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ABSTRACT

On evaluating the *65 Mukharogas* by *Acharya Susruta Dantveshta* is described in subtypes of *Mukharogas* .i.e. under 15 *Dantamulagata Rogas*. On comparing the symptoms of *Dantaveshta* with modern side it can be correlated with periodontitis, now a days known as Pyorrhea Alveolaris. So this research work has planned in such a way to see the effect of two herbal formulation named *Vajradanta Manjana* and *Vidangadi Guggulu* whose ingredients are proven anti-inflammatory, antimicrobial, antioxidant when combined with authentic principles of Ayurveda. This can show markable relief in the symptoms and that too without any side effects as that of modern surgical therapies. The present study is done on 30 patients of *Dantaveshta*, who were grouped into three groups with 10 patients in each group. Group A was treated with *Vajra Danta Manjana for Pratisarna*, Group B with *Vidangadi Guggulu* for oral use, Group C with both the formulation simultaneously. The signs and symptoms were studied before and after treatment. Results of the study indicates significance of Group C as Group C gives 71.11% relief in the criteria for assessment than Group A which gives 53.07% and 49.36% in Group B.

KEYWORDS: *Dantamulgata Rogas, Vajradanta Manjana, Vidangadi Guggulu, Dantaveshta*.

INTRODUCTION

Acharya Sushruta has described 15 *Dantmulagata Rogas,*[1] under which he has described *Dantveshta,*[2] separately. Along with *Susruta, Madhav Nidana,*[3] *Bhavprakasha*, *Yogratnakar,*[4] has also describe *Dantveshta* seperately. In *Charaka Samhita* the word *Dantaveshta* is not explained but *Acharya Charaka* has mentioned the symptoms of *Mukhrogas,*[5] due to vitiated of *Vata, Pitta* and *Kapha*. He said that these symptoms are produces in the disease of seven parts of *Mukha* and he has also described their treatment.[6] *Acharya Vagbhatta* has also not given clear and specific description about *Dantaveshta*. *Dantaveshta* can be defined as disease in which there is pus discharge along with blood and loosening of teeth.[7] Nidana are generally mentioned for all *Mukhrogas* that can be considered as the causes of *Dantaveshta.*[8] The pathological events of *Dantachala* i.e. the symptom of *Dantveshta* begin with the increment of *Doshas* at their respective sites. *Vimargagamana* of these vitiated and increased *Doshas* take place towards the *Urdhwajatru* through *Siras.*[9] Periodontitis is defined as "an inflammatory disease of the supporting tissues of the teeth caused by specific microorganisms or groups of specific microorganisms, resulting in progressive destruction of the periodontal ligament and alveolar bone with increased probing depth formation, recession, or both." The clinical feature that distinguishes periodontitis from gingivitis is the presence of clinically detectable attachment loss as a result of inflammatory destruction of the periodontal ligament and alveolar bone.[10]

Classification of Periodontitis		
Classification	**Form of periodontitis**	**Characteristics**
European Workshop in Periodontology, 1993	Adult periodontitis	• Age of onset: fourth decade of life • Slow rate of disease progression • No defects in host response
	Early-onset periodontitis	• Age of onset: before fourth decade of life Rapid rate of disease progression • Defects in host defense
	Necrotizing periodontitis	Tissue necrosis with attachment and bone loss

So present study is planned to evaluate the nature of the disease, course of the disease and management with the help of some herbal drugs with the hope that these will prove to be more efficacious and least toxic. So keeping this in mind, based upon the aetiopathogenesis of *Dantamulagata Rogas* specifically *Dantaveshta*, the drug formulation *Vajra Danta Manjana,*[11] for *Pratisarna* which is describe in *Chikitsa Chandrodaya* and *Vidangadi Guggulu,*[12] which is described in *Yogratnakar* have been selected for the present study.

AIMS AND OBJECTVES

1. To advise preventive measures to check the occurrence of disease in individuals.
2. To study the effect of drug on the disease.
3. To prove the effectiveness of drugs in the patients of *Dantaveshta.*
4. To explore the aeitiopathogenesis of disease on the basis of classical texts and modern literature.
5. To study the side effects of the drugs if any.

MATERIALS AND METHODS

Selection of Patients
The clinical study was conducted on outdoor patients attending dental OPD of Shalakya Tantra Department of R.G.G.P.G.Ayu.College & Hosp. Paprola. Uncomplicated patients with signs and symptoms of *Dantaveshta* of age group between 20-60years were selected irrespective of any caste, creed, race, religion etc. fulfilling the criteria of selection as eligible for study. The selection of patients will be applied by random sampling method. On the basis of signs and symptoms of *Dantaveshta* (Pyorrhoea Alveolaris) patients were diagnosed acc to ayurvedic and modern sciences. Out of registered thirty patients, thirty followed up for the total trial period.

A special proforma was prepared incorporating the patient's consent and all the sign symptoms based on both Ayurvedic as well as modern description.

Inclusion Criteria
1. Patients presenting with signs and symptoms of *Dantaveshta* (Pyorrhoea Alveolaris).
2. Patients with age group between 20-60 yrs.

Exclusion Criteria
1. Patients below 20 yrs of age.
2. Patients not willing for trial.
3. Cases of Uncontrolled Diabetes, Hypertension, Tuberculosis, Head Injury, Accidental Cases, Scurvy, Purpura, Leukemia, Taking Anti-Platelet Drugs, drugs causing gingival enlargement (e.g Antiepileptic Drugs), Ca of gums or any other associated chronic disease.

Assessment Criteria
Assessment of the effect of treatment has been done on the basis of relief of signs & symptoms of *Dantaveshta* (Pyorrhoea Alveolaris) were graded in four gradations. Most of signs and symptoms of *Dantaveshtha* described in texts are subjective in nature. Hence multi-dimentional scoring system was adopted for statistical analysis & to give results on subjective parameters.
1. *Puyasrava*   Pus Discharge
2. *Raktasrava*   Bleeding Gums
3. *Chaladanta*   Tooth Mobility
4. *Daurgandhaya* Halitosis
5. *Krishanata* Discoloration
6. *Vedana* Pain
7. *Daha* Burning Sensation
8. *Shotha* Inflammation
9. *Dantaharsha* Hypersensitivity
10. *Shriyamana Dantamamsa* Gingival Recession

Symptomatic relief obtained by the treatment given was assessed periodically after seven days of initial scoring, till the completion of treatment. Results were noted on the basis of cured / markedly improved / moderately improved/slightly improved/unchanged and on the basis of clinical improvement.

Criteria for over all assessment
The total effect of the therapy was assessed considering the following criteria.

Cured
100% relief in signs and symptoms.

Markedly Improvement
>75% relief in the signs & symptoms.

Moderately Improvement
50-75% relief in the signs &symptoms

Mild Improvement

25-50% relief in the signs & symptoms.

Unimproved

<25% relief in the signs & symptoms.

DRUG REVIEW

Group I
Vajradanta Manjana
Ingredients of *Vajradanta Manjana*
f=dVq f=Qyk rwfr;k rhuksa ukus iŸkaxA
nUr otz le gksr gS ektwQy l slxaAA
¼fuferU=&eq[kjksxkf/kdkj&Mk- jkeukFk f}osnh½

Properties of Vajradanta Manjana
1. *Katu Rasa*
2. *Laghu Guna*
3. *Ushna Veerya*
4. *Madhura Vipaka*
5. *Tridosha-shamaka Properties*

Method of preparation
***Shodhana* of *Tuttha*[13]**
Shodhana of *Tuttha* is done in *Nimbu Swarasa* for 6 hours.

The paste was allowed to dry and then preserved. *Vajra Danta Manjana* is prepared by taking all the above ingredients in equal quantity and grinding it into fine powder. This fine powder is then sieved from sieve no. 21 so as to use as tooth powder. This powder is given to patient in the dose of 5gm BD.

Group II
Vidangadi Guggulu
Ingredients of *Vidangadi Guggulu*
विडङ्गत्रिफलाच्योषचूर्ण गुग्गुलुना समम्।
सर्पिषा वटकान् कुर्यात् खादेद्वा हितभोजनः॥
दुष्टव्रणापचीमेहकुष्ठनाडीविशोधनान्।
(यो.र.व्रणशोधनरोपणविधिः)

Vidangadi Guggulu is
1. *Katu Rasa*
2. *Laghu Guna*
3. *Ushna Veerya*
4. *Madhura Vipaka*
5. *Kaphavatashamaka* properties

Method of preparation
***Shodhana* of *Guggulu*[14]**
Firstly *Shodhana* of *Guggulu* was done in *Trifala Kwatha*,[15] by *Dola Yantara Vidhi*.

The mass was dried in tray dryer at 50 °C and pounded with a pestle in a stone mortar. Well defined ingredients were taken in equal quantity and fine powder was prepared separately of each ingredient except *Guggulu*. Fine powder of all the contents were mixed properly with the purified *Guggulu* of weight equal to the combined weight of all the ingredients along with *Ghrita*. And then *Vati* of 500mg were prepared.

Grouping
The selected patients were randomly placed and studied under 3 groups:
Group A: Patients in this group has been given *Vidangadi Guggulu* as oral drug.
Group B: Patients in this group has been given *Vajradanta Manjana* for *Pratisarna*.
Group C: Patients in this group has been given both *Vidangadi Guggulu* as oral drug and *Vajradanta Manjana* for *Pratisarna*.

Drug Dose, Formulation And Schedule
Drug
• *Vidangadi Guggulu* as oral drug
• *Vajradanta Manjana* for Pratisarna.

Dose
• *Vidangadi Guggulu*: 500 mg thrice a day.
• *Vajradanta Manjana*: 5 gm twice a day.

Duration: 3 weeks.
Follow up: After 1 week.

Statistical Analysis
The information regarding demographic data was given in percentage. The scoring of criteria of assessment was analysed statistically in terms of mean values of B.T. (Before Treatment), A.T. (After treatment), S.D.(Standard Deviation), and S.E.(Standard Error). The effect of therapy in three groups was assessed by applying students paired t' test for comparing the before treatment and after treatment scores of assessment criteria.The results obtained were considered highly significant for p 0.001 or <0.01, significant for $p<0.05$ and insignificant for $p >0.05$.For intergroup comparison unpaired t test was applied.

OBSERVATION
In present study, 36.66% of the patients were of age group 50-60 yrs. Maximum patients were females .i.e. 80% and only 20 % patients were males, maximum number of patients i.e. 76.66% were married, 80% of the patients were Hindus. 60% of patients were housewives followed by labourers (16.66%). 43.33% of the patients were poor class and 33.33% were middle class, 60% of the patients were non-vegetarian. 60% patients were having addiction to tobacco while 23.33% patients were addicted to alcohol, maximum patients were of *Pitta-Kaphja Prakriti* .i.e. 63.33% of the patients,40 % of the patients were of *Mandagni* , followed by *Vishama Agni* (26.66%). Maximum no. of the patients were uneducated (53.33%) followed by patients educated upto matric. 63.33% of the patients were of *Madhyama Koshtha*. Maximum no of the patients is having *Atinindra* (40%) followed by *Alpanindra* .i.e. 33.33%. 63.33% of the

patients maintain their oral hygiene with brush and only 20% with finger. Maximum number of patients 60% were doing *Danta-Dhawana* only in the morning while 30% were doing *Danta Dhawana* twice a day and only 10% were doing more than two times in a day. Maximum of the patients were using tooth paste .i.e. 60% . Most of the patients i.e. 56.66% were having *Madhyam Abhyarana Shakti*. Similarly maximum number of patients i.e. 50% were having *Avara Jaran Shakti*. 66.66% were taking *Madhura Rasa*. Altered colour of the gingiva was found in 40% of the patients. Altered contour was found in 76.66% of the patients. Recession of the CE junction was found in 53.33% of the patients. 26.66% of the patients were observed with exposure of the root upto cervical 1/3. 90% of the patients had soft consistency. In surface texture (stippling) was absent in 63.33% of the patients. Bleeding on palpation was present in 100% of the patients. Adequacy of attached gingival was found in 100% of the patients.

100% patients were present with the complaints of *Raktastrava, Daurgandhaya* and *Shotha*. 60% of the patients were having *Puyastrava* and 50% of the patient is having *Chaladanta* and *Shreeyamana Dantmamsa* each. Each symptom .i.e. *Vedna* and was present in 73.33% of the patients. *Dantaharsha* was present in 66.66% of the patients. *Daha* and *Krishanata* was present in each 40 % of the patients.

Effect of therapy
Effect of Therapy on Individual Criteria In Group A
The efficacy of *Vajradanta manjana(pratisarna)*was adjudged in 10 patients on various parameters of assessment criteria and results were derived after executing statistical analysis.

Statistically Highly significant result (p<0.001) were found in *Daurgandhya* (percentage of relief was 56.25%). *Dantaharsha* (percentage of relief was 68%). *Shotha* (percentage of relief was 65%).

Statistically significant result (p<0.050) were found in *Raktastrava* (percentage of relief was 50%).*Puyastrava* (percentage of relief was 50%).*Chaladanta* (percentage of relief was 66.66%).*Krishnata (*percentage of relief was 53.33%). *Daha* (percentage of relief was 41.17%).

Statistically insignificant result (p>0.050) were found in *Vedna* (percentage of relief was 26%) *Sheeryamana Dantamamsa* (percentage of relief was 13.33%).

Effect of Therapy On Individual Criteria In Group B
The efficacy of *Vidangadi Guggulu (orally)* was adjudged in 10 patients on various parameters of assessment criteria and results were derived after executing statistical analysis.

Statistically Highly significant result (p<0.001) were found in *Raktastrava* (percentage of relief was 53.33%),

Puyastrava (percentage of relief was 65.21%), *Vedna* (percentage of relief was 53%), *Shotha* (percentage of relief was 83.33%).

Statistically significant result (p<0.050) were found in *Chaladanta* (percentage of relief was 50%), *Daurgandhya* (percentage of relief was 50%), *Krishnata* (percentage of relief was 50%), *Dantaharsha* (percentage of relief was 57.14%).

Statistically insignificant result (p>0.050), *Daha* (percentage of relief was 37.50%), *Sheeryamana Dantamamsa* (percentage of relief was 20%).

Effect of Therapy On Individual Criteria In Group C
The efficacy of both therapy i.e. *Vajradanta Manjana as Pratisarna* and *Vidangadi Guggulu* orally 500mg TID in 10 patients adjusted on varied parameters and results were derived after execution of statistical methodology.

Statistically Highly significant result (p<0.001) were found in *Raktastrava* (percentage of relief was 94.73%), *Puyastrava* (percentage of relief was 68.18%), *Vedna* (percentage of relief was 58.33%), *Shotha* (percentage of relief was 85.71%), *Dantaharsha* (percentage of relief was 76.47%), *Daurgandhya* (percentage of relief was 86.95%).

Statistically significant result (p<0.050) were found in *Chaladanta* (percentage of relief was 100%), *Daha* (percentage of relief was 62.50%)

Statistically insignificant result (p>0.050), *Krishanata* (percentage of relief was 53.84%), *Sheeryamana Dantamamsa* (percentage of relief was 27.27%).

Intergroup Comparison
In this part of the study intergroup comparison is done on the effect of therapies on assessment criteria's statistically along with relief difference in percentage between three groups which is recorded and presented below.

Raktastrava: In *Raktastrava* there is statistically significant difference between TG B vs TG A, TG C vs TG A and TG C vs TG B at the level of p<0.050.

Group A gives 3.33% more relief than Group B and Group C gives 41.4% more relief than Group A and Group C gives 44.7% more relief than Group B.

Puyastrava: In *Puyastrava* there is statistically significant difference between TG C vs TG B at the level p<0.050. But there is no significant difference between TG C vs TG A and TG B vs TG A.

Group A gives 15.21% more relief than Group B and Group C gives 2.97% more relief than Group A and Group C gives 18.18% more relief than Group B.

Chaladanta: In *Chaladanta* there is statistically significant difference between TG B vs TG A, TG C vs TG A at the level of p<0.050. But there is no statistical difference between TG C vs TG B.

Group B gives 16.66% more relief than Group A and Group C gives 50% more relief than Group A and Group C gives 33.34% more relief than Group B.

Daurgandhaya: In *Daurgandhya* there is statistically significant difference between TG C vs TG A and TG C vs TG B at the level of p<0.050. But there is no statistical difference between TG B vs TG A.

Group B gives 6.25% more relief than Group A and Group C gives 36.95% more relief than Group A and Group C gives 30.7% more relief than Group B.

Krishanata: In *Krishnata* there is statistically significant difference between TG C vs TG A at the level of p<0.050. But there is no statistical difference between TG C vs TG B and TG B vs TG A.

Group B gives 3.33% more relief than Group A and Group C gives 3.84% more relief than Group A and Group C gives 0.51% more relief than Group B.

Vedana: In *Vedana* there is statistically significant difference between TG B vs TG A, TG C vs TG A at the level of p<0.050. But there is no significant difference between TG C vs TG B.

Group A gives 26.67% more relief than Group B and Group C gives 5% more relief than Group A and Group C gives 31.67% more relief than Group B.

Shotha: In *Shotha* there is statistically significant difference between TG B vs TG A, TG C vs TG A at the level of p<0.050. But there is no significant difference between TG C vs TG B.

Group A gives 18.33% more relief than Group B and Group C gives 1.67% more relief than Group A and Group C gives 20% more relief than Group B.

Daha: In *Daha* there is statistically significant difference between TG B vs TG A, TG C vs TG A and TG C vs TG B at the level of p<0.050.

Group B gives 3.67% more relief than Group A and Group C gives 25% more relief than Group A and Group C gives 21.33% more relief than Group B.

Dantaharsha: In *Dantaharsha* there is statistically significant difference between TG B vs TG A, TG C vs TG A and TG C vs TG B at the level of p<0.050.

Group B gives 11.61% more relief than Group B and Group C gives 19.33% more relief than Group A and Group C gives 7.72% more relief than Group B.

Shriyamana Dantamamsa: In *Shriyamana Dantamamsa* there is statistically no significant difference between TG B vs TG A, TG C vs TG A and TG C vs TG B.

Group A gives 6.67% more relief than Group B and Group C gives 7.27% more relief than Group A and Group C gives 13.94% more relief than Group B.

Overall intergroup comparision
In inter group comparision over total criterias there is statistically no significant difference between Gr. A vs Gr. B , Gr. A vs Gr. C and Gr. B vs Gr. C. Group C gives 18.04% more relief than Group I and 21.75% more relief than Group II whereas Group I gives 3.71 % more relief than Group II showing Group I is effective than Group II and Group III is most effective among all.

Overall effect of all groups in 30 patients under trial
The overall effect of the formulation in all the Group suggested that complete cure was not found in any of the three Groups.

In Group A, 10% patients were markedly improved, 50% patients were moderately improved and 30% were mildly improved. In Group B, also 80% patients were moderately improved and 20% patients were mildly improved. In Group C 10% patients were cured, 60% patients were markedly improved and 30% patients are moderately improved.

DISCUSSION
Specifically in *Dantmulagata Rogas, Dantaveshta* is mentioned by some *Acharyas. Acharya Charaka* has not mention particularly Dantamulgata Rogas anywhere. *Acharya Susruta* has mentioned *Dantveshta* as a disease of dantamula i.e. one of the subsite of 65 mukhrogas[16] described by acharya susruta and in *Dantveshta* he has used the term "*Puyarudirstravanti*" which symbolizes pus mixed blood discharge from gums and "*Chaladanta*" which it self symbolizes that periodontal structure has been hamperd that much that it leads to loosening of teeth. So *Dantaveshta* is compared with Pyorrhoea Alveolaris. The pathological events of *Dantaveshta* begin with the increment of *Kapha Doshas* that combines with *Dushit Rakta* at their respective sites.

Ayurvedic texts several treatment modalities such as *Pratisarna, Raktamokshana, Gandusha,Vati* have been mentioned for the management of *Danta Veshta.*[17] Among these *Pratisarna* of *Vajradanta Manjana* has been selected in this study and it is kind of local application which mainly possesses therapeutic effect such as *Shodhana* (cleansing) and *Ropana*). It is mainly dominant with *Katu* (50%) *Rasa; Laghu* (83.33%) *Guna, Madhura* (50%) *Vipaka, Ushana* (66.66%) *Veerya* and *Tridoshamaka* (41.66%) *Karma*. Further, it's *Shothahara, Lekhana, Shodhana, Raktasthambhana,* and *Krimighna* (antimicrobial) properties would help to remove the gingival pathology. Its *Rasayana* property improves the gingival defence mechanism and helps to

regenerate gingival tissues. *Vidangadi Guggulu Vati* is taken from *Yogratnakar* from chapter *Vranashodhana Ropana Vidhi*. It is mainly *Katu* (77.77%) *Rasa* dominant that helps in *Lekhana, Karshana* and *Dushta Mamsa Upshamana* properties. Its *Laghu* (77.77%) *Guna* which help to alliviate *Kapha* and *Meda* all over the body. This Yoga is having *Ushana* (66.66%) *Veerya* which act as *Kapha Shamaka, Karshana, Lepana Ama Pachana, Dhatu Samshoshana Properties*. it is mainly *Kapha Vata* (55.55%) *Shamaka* and having *Madhura* (77.77%) *Vipaka*. So by *Kapha Shamaka* and *Karshana* Properties it will reduce the *Drava Guna* of *Kapha* and at reduces pus discharge in *Danta Veshta*. Any side effect of both the drugs was not observed during and after completion of the trial.

CONCLUSION

According to the classical texts and subtitle *Dantveshta* is described by *Acharya Susruta, Madhavnidana, Yogratnakar* and. *Acharya Charaka* and *Vagbhatta* has not described *Dantveshta* either as separate disease or neither under *Dantmulagata Rogas. Dantveshta* is mainly due to due to *Kapha Dosha* and *Vitiated Rakta*. So the present study entitled A clinical study on *Dantaveshta* (Pyorrhoea Alveolaris) with *Vajradanta Manjana* and *Vidangadi Guggulu* essentially aims to evaluate the effectiveness of two ayurvedic formulationfor the management of Dantaveshta as *Vidangadi Guggulu* and *Vajradanta Manjana* are having *Kapha Vata Shamaka and Tridoshamaka* properties respectively.*Vajradantamanjana* was taken from *Chikitsa Chandrodaya* and *Vidangadi Guggulu* from *Yogratnakar*. In this trial group C gives highest relief than group A and Group B.

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