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## The Role of *Karnadhupan* in the Management of Chronic Suppurative Otitis Media (Karnasrava) - A Case Study

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### ABSTRACT

Chronic Suppurative Otitis Media (CSOM) is a long standing infection of a part or whole of the middle ear cleft characterized by ear discharge and a permanent perforation. It is an important cause of preventable hearing loss, especially in developing countries. Most approaches to treatment have been unsatisfactory or are very expensive and difficult. As per *AcharyaSushrutaKarnasrava* is due to head injury or tumbling in water or suppuration of abscess; *Vata* encircles in the ear and causes the discharge of pus. This study has been carried out with *Gugglu* (*Commiphoramukul*) and *Nimba* (*Azadiractaindica*) *patra* which are *rakshoghnadravya* used in *karnasrava* with the process of *Karnadhupan*. In this study, a patient fulfilling the diagnostic and inclusion criteria of CSOM was selected and *gugglu* and *nimbapatradhupan* was carried out in both affected ears for 7 days. The efficacy of the drug was analyzed in terms of the relief produced in the signs and symptoms before and after treatment. The results of the study were found encouraging and a significant reduction in ear discharge was found.

### KEYWORDS

*Chronic suppurative otitis media, Karnasrava, Ear discharge, Gugglu, Nimba*



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## INTRODUCTION

Today every person's lifestyle have been changed with food habits, working hours, type of work & pollution etc., these factors are responsible for upper respiratory tract infections which leads to otitis media (*karnasrava*)<sup>1</sup>. The use of antimicrobial drugs especially the broad spectrum antibiotics has confounded the problems of their efficacy as development of multiple drug resistance, adverse effects on the host including hypersensitivity, immune-suppression, allergic reactions etc. Hence, there is a constant need of development of new antimicrobial agents which are cost effective and cause less or no side effects. *Sushruta* has already described the treatment of *Karnasrava*, *Putikarna* and *Krimikarna*<sup>3</sup>. Antimicrobials of plant origin have enormous therapeutic potential. They are effective in the treatment of infectious diseases while simultaneously mitigating many of the side effects that are often associated with synthetic antimicrobials. The existence of organisms and their role in the cause of several infectious diseases have been recognized and elaborated in Ayurveda as well as modern science and for the prevention and cure of such diseases; the drugs and therapies are prescribed in Ayurvedic text. Some of these medicines

might have bacteriostatic or bacteriocidal effect. It is today's need to elaborate these properties of herbal medicines. *Krimi* (microbes) is the main cause of *Vranadushti* i.e., pus discharge (*Puya*), bad odor in a wound etc. To get prevention from *Krimi* *Rakshoghna dhupan* is described in many Ancient Ayurvedic texts<sup>2</sup>. These *dravyas* are placed in *Agni* and the smoke (*dhuma*) generated is known as *rakshoghna dhuma* which gives prevention from microbes. This *dhupan* keep wound free from microbes, pus and bad odor. The various *dhupana dravyas* are mentioned in *Granthas*; here *Gugglu* and *Nimbapatra* have been selected as *dhupandraavyas* to see their effects on pyogenic bacteria.

So, here a case is presented where a chronic otitis media (*karnasrava*) is treated with *gugglu* and *nimbapatra dhuma*.

## CASE REPORT

A 45 years old male patient of *vata-pitta prakriti* attended the OPD of *Shalaky Tantra* dept. in April 2017 having complaints of intermittent discharge (*karnasrava/puyasrava*) from both ear since last 2 months. He also complained of itching (*karnakandu*), unpleasant (foul) smell (*daurgandha*) and mild deafness (*badhiryas*). Patient had no complaints of tinnitus and



pain in the ear. Patient had a history of trauma in right ear 25 years back. He had no systemic disease and was good at hygiene. Otosopic examination revealed that the external acoustic meatus of the both ear were filled with yellow and thick discharge which was white/yellowish (*shweta/pita*), thick (*gadha*), viscous (*slakshana*), profuse (*prabhut*) and foul smelling (*daurgandh*). After mobbing with ear bud the tympanic membrane was found inflammed, opaque, centrally perforated with blurred margin. Tunic Fork Test (Rinne's Test) showed presence of conductive deafness in both ear with bone conduction greater than air conduction (BC>AC).

### Investigations

Routine haematological test like Total Leucocyte Count (TLC), Differential Leucocyte Count (DLC), Erythrocyte Sedimentation Rate (ESR), Random blood sugar (RBS) were carried out in the patient, to assess the condition of the disease and to exclude any other systemic pathology. All pathological values were normal. Culture and sensitivity test of discharge revealed the presence of *Staphylococcus aureus*- one of the most common bacterial pathogens of otitis media (Smeltzer and Bare 2004).

### Ayurvedic management of *karnasrava*

*Acharya Sushruta* has explained the line of management of *karnasrava* in the chapter *Karnagata Roga Pratishedha Adhyaya* with *Sirovirechana*, *Dhupana*, *Purana Pramajana*, *Prakshalan*<sup>4</sup> etc. While *dhupanis* advised with *Rajavrikshadigana* and *Sursadigana ausadhi*<sup>5</sup> (drugs).

In the present study we have selected *Karnadhupana* as a main line of treatment with *Nimba* and *Gugglu*.

### **Karnadhupan Therapy**

*Puyasrava* was mobbed with ear bud prior to *dhupan karma* every time. *Dhupan* was given by keeping the *Gugglu* and *Nimbapatra* on hot pan (*tava*) and it was covered with aluminium funnel. *Dhupan* was given for 5 minutes daily for 7 days.

### **Diet and Restrictions**

Patient was advised to avoid the aggravating factors like exposure to cold wind, intake of cold substances, swimming, head bath with cold water and oil application on head. Advised to clean the ear daily and plug the ear with cotton especially while taking head bath to avoid the entry of water into the ear.

## RESULTS

After 7 days discharge, itching and foul smell got reduced. There was no discharge, itching and foul smell reported after one month of follow up with minimal



improvement in deafness. Dry perforation was present.

## DISCUSSION

*Gugglu* has *laghu*, *ruksha*, *tikshana guna* with *ushna veerya* and it is *vata-kapha shamaka* this property reduces the discharge. As the *gugglu* is ‘*ushna*’ acts ‘*vatashamaka*,’ due to ‘*tikshna*, *ushnaguna*, *kaphashamak*. *Gugglu* is also *Shothahara*, *Jantughna*, *Vranashodhaka*, *Vranaropaka* and *Vednasthapaka*, it is used in *kapha-vataroga*. *Dhupa* of *gugglu* can easily reach at affected area<sup>6</sup>. These properties of *gugglu* are useful in the management of *karnasrava*. Also in Ayurvedic classic it's *Rasayana* property is mentioned which helps to overcome the immunological derangement induced in otitis media by boosting one's immunity which breaks the pathogenesis of the disease. *Nimbapatra* when used along with other *rakshognadravya* is active against *krimi*. Its *dhupan* shows good antibacterial effect. Here *Nimbapatra* and *Gugglu* were selected among all the *rakshogna dhupan dravya* described in ancient texts. *Nimba* is well known and described as *kandughna*, *kushtaghna*, *krimighna*. *Nimbapatra* consist of *tikta-kashaya rasa* and *ruksha*, *laghuguna*. *Nimba* is *Vayu* and *Akash mahabhoot pradhan* that is why it's *patra*

*dhuma* may act on pyogenic bacteria *staphylococcus aureus*. This *Nimbapatradhuma* stops the multiplication of bacterial cell and dries up the intracellular fluid matrix in a bacterial cell by its concentration of *panchabhautik* and properties of *mahabhoota* i.e *ruksha*, *laghu*, *vishad*, *lekhan*<sup>7</sup>. This mechanism may produce disturbance in bacterial cell's metabolism and hence resulting in bactericidal action of the *dravya*. *Nimbapatradhuma* acts by inhibiting the growth of bacteria by killing them.

## CONCLUSION

*Karnasrava* (otitis media) is a disease which may lead to severe complications. Ayurvedic line of treatment gives useful result in the management of *karnasrava* by improving general status. The mode of treatment was found to be cost effective, safe and ease of implement.

## FOOTNOTES

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