A REVIEW ARTICLE ON GANDHAKDRUTI IN THE MANAGEMENT OF OTOMYCOSIS

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ABSTRACT
Hearing loss may be caused by number of factors including ageing, noise, exposure, infections, trauma to ear etc. A common condition that results in hearing loss is chronic ear infection. Deafness may influence a social cognition intervention. Infection like otomycosis causes conductive deafness also there might be a secondary bacterial infection leading to further auricular complications. To avoid all these there is a need of such a remedy which is responsible for the growth of healthy tissue in external auditory canal along with antifungal and antimicrobial properties which will prevent the complications due to fungal infections. In Ayurveda as a quality approach towards the management of otomycosis there is one unique preperation called Gandhakdruti which is having all these qualities and ultimately prevent the recurrance of the disease.

KEYWORDS: Otomycosis, Gandhakdruti, Fungal infection, Gandhak.

❖ Aim
To study the efficacy of gandhakdruti in otomycosis.

❖ Objectives
1) To review the preparation & properties of gandhak druti.
2) To study the disease otomycosis (a fungal infection).

❖ INTRODUCTION
Otitis externa which is caused by fungus called as otomycosis. It is estimated that approximately 5-25% of the total cases of otitis externa are due to the otomycosis. It is one of...
the most common disease, specially in coastal area like Mumbai. Otomycosis is more prevalent in hot & humid climate. Therefore it is commonly seen in monsoon & summer session.

In general population the prevalence of otomycosis is 5.2% all over the world & in India 9.00% according to American Academy of Otorhyngology. The 90% of fungal infection involves aspergillus species & rest candido species. According to studies the incidence of otomycosis is reported to be high in tropical countries.

Mumbai one of the Coastal cities in India where the ambient temperature varies from minimum 18°C to max 38°C. There is a heavy rainfall of about 1800 mm per annum of which about 90% was received in the monsoon months between June & September. The relative humidity is generally very high reaching saturation levels during monsoon months.

Symptoms of otomycosis include pruritis, pain, otorrhoea. In initial stage of disease ear discharge is watery but if there's Secondary bacterial infection occurs it becomes mucopurulent. Ear blockage & hearing loss are due to the accumulation of fungal mass in external auditory canal. Ringing in ear may be because of the vibration of tympanic membrane due to discharge & debris also because of increased vascularity in the EAC. Due to the removal of debris i.e. (fungal mass) the ulceration of EAC is likely to happen. Considering all these signs & symptoms it would come to know that how the inherent properties of the drugs of gandhak druti will help to encounter the pathophysiology/ subside the further complication due to fungal infection by enhancing the growth of healthy tissue over there.

Gandhak druti is one of the unique preparation of Rasoushadhi mentioned in Rasa tarangini, Ras Ratna Samucchaya, Rasendra Chudamani, Ayurved prakash, Ras hridaya tantra, Rasa prakash sudhakar and Rasarnava. It is the process which maintain hard & dense drayyas in the molten state, known as druti. During the preparation of Gandhak druhi til tail is used. So except til tail all the contents of gandhak druti has ushna-tikshna guna, katurasa & katuvipaka. Though the til tail has madhur rasa & vipaka, it is sanyogvahi so it possess all the properties of substance with which it is processed.

Katu rasa having property of mamsan vilikhati i.e. it corrodes the muscle tissue & shonit Sanghat bhinnati i.e. it clears the accumulation or other obstruction also margaan vivrunoti
means it cleans & dilate the passage & protects from excessive granulation. The main ingredient of druti i.e. gandhak is having krimighna property. With krimihara property it will limit the further growth of micro-organisms in canal.

While preparation of gandhakdruti, it is directly introduced to the fire i.e. Agni sanskara. Due to this there will be rise in Agni mahabhoot and there is decrease in Aap & prithvi mahabhoot. Therefore final product will be having laghu, tikshna, sookshma and ushma properties.

As per modern view, Sulphur possesses bacteriostatic as well as bacteriocidal properties. Also the past studies have been done to study the antimicrobial & antifungal activity of gandhakdruti. Apart from sulphur, pippali, also caries antimicrobial properties. Shunthi also known for it's antipyretic & analgesic effect.

So taken into account the Sign- symptoms of otomycosis also all the properties & action of gandhakdruti is responsible for growth of healthy tissue at site & ultimately leads to the prevention of further complications due to fungal infection & recurrence of the related disease.

❖ MATERIALS AND METHODS

Following materials are required for the preparation of gandhak druti

- Gandhak
- Godugdha
- Goghrut
- Trikatu
- Til Tail
- Instruments - Gas, Vessels, Cloth, Spoon & Thread.

It required 2 steps first is Gandhak shodhan Second is preparation of druti.

Gandhak shodhana (Ayurved prakash)

- Vessel containing normal temperature of godugdha is covered with clean cotton cloth & tied at neck firmly.
- Required goghruta is melted in a vessel and powdered gandhak is added to it.
After melting of gandhak in goghruta, poured the mixture in Vessel having godugdha through Cotton cloth.

During the pouring of gandhaka in godugdha continue stir the mixture to avoid blockage of cloth as the gandhak gets cooled over it.

The impurities like stones & other physical structure remain on cloth & gandhak gets filtered in godugdha.

Wash out shuddha gandhak with hot water till it get free from goghruta & godugdha. Repeat the procedure for twice.

Preperation of Gandhak (Ref Ras Rana Samuechaya 3/27-31).

Material
- Gandhak.
- Trikatu.
- Til tail.

With the help of khalwayantra mix the trikatu (1/6 of gandhak) & gandhak churna. Sprinkled the mixture over cotton doth & rolled gradually from one end to another till varti forms. Then hold this varti with the help of thread & then immersed in a vessel Containing til tail.

After 3 hrs remove varti from tail. Held one end of varti with forcep & ignite the opposite end with fire. Then collect the dribbling oil drops from the burning ends of varti in bottle.

❖ DISCUSSION

Otomycosis is a fungal a ear infection, superficial mycotic infection of the outer ear canal. It is more common in tropical countries. The infection may be either subacute or acute & is characterized by maladorous (foul- Smelling) discharge, inflammation, pruritis, scaling & severe discomfort. The mycosis results in inflammation, superficial, epithelial exfoliation, masses of debris containing hyphae suppuration & pain.

Mostly fungal ear infections are caused by Aspergillus Niger, Aspergillus fumigalus, Penicillium & Candida albicans. Otomycosis commonly results from over use of antibacterial ear drops which should never be used for more than 7 days. In such cases, the fungus is an opportunist that results from antibacterial suppression of the normal bacterial flora, combined with the steroid the drop also contain. The use of earbud to dean ear canal when it is wet i.e.
especially after a shower can also cause otomycosis. Because skin gets delicate when it is wet and can be easily ruptured making it susceptible to on infection.

Otomycosis does not usually cause as much canal skin edema as done acute bacterial external otitis. While a severe pressure type of pain is prominent feature of advanced cases, the ear is usually much less tender, if at all, to traction or tragal pressure. Appearance of fungus is variable, most commonly grey, white or black, often intermixed cerumen and clinging to the canal skin. Grey concretions may be present. It can require significant time to resolve, best done with mic the ear instrument by an ENT specialist.

Otoscopy [Examination of Ear] is best done with binocular microscope that provides adequate lighting, depth perception having ability to comfortably remove the fungus. finding range from scattered saprophytic fungal colonies of various colours causing no symptoms to densely packed fungal debris, often intermixed with cerumen (wax), filling the entire canal & involving the tympanic membrane. The fungus can cling to the skin and tympanic membrane presumably because of invading hyphae and can require significant time to accomplish complete removal.

So the treatment of otomycosis typically includes aural syringing to remove the fungal mass followed by the use of topical combination of antifungal & antibiotic in order to avoid Secondary bacterial infection for a week.

But the use of antimicrobial drugs especially the broad Spectrum antibiotics has confounded the problems of their efficacy as - development of multiple drug resistance and adverse effect on the host in including hypersensitivity immune suppresion, allergic reaction etc.

❖ CONCLUSION

As we know there are small 3 bones in inner ear called ossicles, which vibrates when hit by sound waves. These bones stimulate the nerve ending that transmits the signals to the brain to be interpreted.

Due to the infection like otomycosis & it's secondary complication the health of local canal tissue get destroyed due to further severe congestion induced dryness and the function of conduction of sound waves can be compromised.
Gandhak druti itself contains til tail having virtue of vaat Shamana but not aggravate kapha it is known to work on saptadhatus as a rasayana. Properties of til tail also get enhanced when processed with the content like gandhak (Sulphar) having bacteriostatic as well as bactericidal properties.

With all the above facts it can be concluded that ayurveda possess a quality approach towards management of otomycosis and it's complication with the use of gandhak druti in order to induce the local healthy tissue in canal and provides the ability to prevent the recurrence of the disease in future.

Hence, there is a constant need of development of new antimicrobial agents which are cost effective and with no other side effects.

So, taken into consideration the above limitation, we bound to approach, the alternative standard ayurvedic remedy which has been checked for its specific antimicrobial & antifungal activity. Past studies have been done to study the antimicrobial & antifungal activity of Gandhak druti.

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