



Ayurvedic Management of Otomycosis - A Case Study

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ABSTRACT:

Introduction: Otomycosis is a type of otitis externa occurring due to fungal infection characterized by intense itching, pain in the ear, watery discharge and ear blockage. It is frequently seen in hot and humid climate of tropical and subtropical countries. In general population, the prevalence of otomycosis is 5.2% all over world and in India 9%. Further 5-25% otitis externa is due to otomycosis. The 90% of fungal infection involves *Aspergillus Niger* and rest *Candida Albicans* species. Treatment includes Aural Toileting, administration of antifungal agents or antibiotic steroid ear drops. These drugs have common side effects like burning sensation, irritation, swelling of the ear. Based on signs and symptoms it can be correlated to *karnakandu*. *Karnakandu* is caused by vitiation of either *Kapha dosha* alone or combined with *Vata dosha* and it is characterized by itching sensation and inflammation in the ear canal. Treatment includes *Nadisveda*, *Vamana*, *Murdhavireshana*, *Dhoomapana* and *Sarva kapha nashaka chikitsa*.

Materials And Methods: A 45 year male patient visited our OPD with complaining of itching, aural blockage and pain in the ear since 15 days. He was treated with *karnapramarjana* followed by antifungal *arka* ear drops 2 drops TID and Tablet *Nimbadi Guggulu* 1 TID for 7 days.

Conclusion: Patient got complete relief from all signs and symptoms. Thus it can be concluded that, Antifungal Arka Ear drops can be advised for successful treatment in patients of *Karnakandu* (Otomycosis) as it is cost effective, ease of administration and given better efficacy in treatment.

Keywords: Otomycosis, *Karnakandu*, Antifungal *Arka* ear Drops.

INTRODUCTION

Otomycosis is a fungal infection affecting the external auditory canal that often occurs due to *Aspergillus niger*, *Aspergillus fumigatus* or *Candida albicans*. It is seen in hot and humid climate of tropical and subtropical countries.

Secondary fungal growth is also seen in patients using topical antibiotics for treatment of otitis externa or middle ear suppuration. It is characterized by intense itching, pain in the ear, watery discharge with musty odor and ear



blockage¹. In general population, the prevalence of otomycosis is 5.2% all over world and in India 9%. Further 5-25% otitis externa is due to otomycosis. The 90% of fungal infection involves *Aspergillus Niger* and rest *Candida Albicans* species². Treatment includes removal of fungal mass or discharge or epithelial debris which causes growth of fungus, administration of antifungal agents or antibiotic steroid ear drops³. These drugs have common side effects like burning sensation, irritation, sometimes rash, swelling of the ear, severe dizziness, and difficulty in breathing. This condition can be compared with *karnakandu*.

Karnakandu is an ear disease characterized by itching sensation in the external auditory canal. It is caused by *kapha* alone^{4, 5} or along with *vata*⁶. The *Samanya chikitsa* includes *Nadisveda*, *Vamana*, *Dhoomapana*, *Shirovirechana* and *Sarva Kaphahara Chikitsa & Nasyadi Karma*⁷.

There are no specific ear drops for *karnakandu* available in Ayurvedic pharmaceuticals. By considering these facts, there is need to explore the treatment protocol which is safe, effective and easy for administration. Antifungal arka ear drop was selected as a *Kaphahara chikitsa*. Aural Toileting followed by Antifungal Arka ear drops and orally Nimbadi Guggulu was considered for this study.

MATERIALS AND METHODS

Case History: A 45 year old male patient came to SJGAMC Shalakyia OPD with chief complaints of itching, aural blockage and pain in left ear since 15 days.

Family History – Nothing significant

Medical Treatment – Patient was Consulted elsewhere and prescribed with ciplox Ear drops and patient did have relief.

H/O of present illness – Patient was said to be apparently normal before 15 days then gradually he developed itching, Aural Blockage and pain in the left ear. Then he consulted Elsewhere and prescribed with ciplox Ear drops and patient did have relief. So he visited SJGAMC Shalakyia OPD.

General Examination - The pulse rate was 72/minute. Respiratory rate was 18/minute and blood pressure was 110/80 mmhg. Systemic examination was within normal limits.

Dashavidha pareeksha - He was *Kapha-Pitta Prakruti*. *Vikruti* was found to be *kapha*. He was in *yuvavasta*. His *Saara*, *Satva*, *Samhanana*, *Akruti*, *Vyayamashakthi*, *Pramana* and *Satmya* were *Madyama*.

Ashtavidha pareeksha: His *Prakriti* and *Nadi* were *Kapha-*

Pittaja, *Mutra*, *Shabda* were *Prakrita*. *Mala* was *Abadha*. *Jihva* was *Alipta*. *Sparsha* was *Anushmasheetha*. *Akruti* was *Madyama* and *Drik* was *Prakrita*(6/6).

Ear examination: Post Auricular, Pre Auricular, pinna were normal in both ears.

EAC of right ear was normal and left ear was occluded with fungal mass which is black in colour. The skin of EAC was hyperemic after Aural Toileting. Tympanic Membrane of both ears was Intact.

Srotopareeksha - *Rasa vaha srotas* was involved.

Diagnostic criteria - Fungal mass (Otoscope).

Therapeutic Intervention:

Aural Toileting followed by antifungal Arka ear drops 2 Drops TID for 7 days and Tablet Nimbadi Guggulu orally 1 TID for 7 days. Table No: 1 Showing Treatment Protocol

OBSERAVATION AND RESULTS:

Table No: 2 Showing Improvement in signs and symptoms (Figure 1):

Gradings Of Parameters

Table No: 3 & 4 Showing Grading of Subjective Parameters (PNS Scale)

Table No: 5 showing grading of subjective Parameters

Method of preparation of Antifungal Arka Ear Drops

Antifungal Arka ear drops was prepared by the method of *Arka* preparation

Ingredients: Table 6

Method of preparation¹⁸

The above said drugs are mixed together and made into coarse powder. 40 gms of coarse powder was taken and later 400 ml (1: 10) of cold water was poured and mixed up well. It was stored in an airtight container for 12 hrs (the previous day night of medicine preparation). The next day stored medicines were put into *arka yantra* (distillation apparatus), the distillation process started with 800C heat, finally, 230 ml of arka was collected, after cooling arka was stored in an airtight container.

DISCUSSION

Sushruta has explained 28 *karnaroga* and *karnakandu* is one among them. The features of *karnakandu* can be correlated with otomycosis because itching is the main symptom in both. Otomycosis is a fungal infection of external auditory canal characterized by intense itching, pain and aural blockage. *Kapha* and *Vata dosha* are responsible for *karnakandu*, since *kandu* is main *Lakshana* in *karnakandu*, *kapha* is considered as predominant *dosha*. Because of ease of administration, more tissue contact

time, safe, effective and more absorption rate, the case was treated with antifungal Arka ear drop (2 drops TID) that was prepared by drugs (*Nimba Patra, karpoora, Vacha, Haridra, Amalaki, Chavya, Vidanga, Guduchi Patra, Shunti and Pippali*) which were proven to have antifungal action in vitro and Nimbadi Guggulu (1 TID). The properties of antifungal ear drops were *katu, tikta, Kashaya rasa pradhana, laghu ruksha guna, ushna virya, katu vipaka* and having qualities of *vatakapha shamana, kandugna, krimighna, shoolaghna*. The drugs also have properties like antifungal activity (*Aspurgillus Niger*) and anti-inflammatory action which are essential for the treatment of *karnakandu* (otomycosis). Hence, by these qualities the antifungal ear drops reduces the growth of fungal mass and helps to reduce pain, aural blockage and inflammation. By these properties it is very much useful in *karnakandu* (otomycosis).

Mode Of Action Of Antifungal Ear Drops

Ear drop is the process of putting medicine into the ear canal and it is modified method of *karna poorana*. The medicine which is instilled into the ear canal after aural toileting is absorbed through skin of EAC and TM and According to *Ayurveda* it is absorbed by *bhrajaka pitta* present in skin of EAC. There will be more tissue contact time of medicine and the absorption rate is also more. So it eliminates the *doshas* and cures the disease.

Discussion On Antifungal Property Of Antifungal

Arka Ear Drops

An antifungal Arka ear drop was prepared by selecting the drugs proven for antifungal action in vitro. The Polyherbal antifungal ear drops shows inhibit action over growth of fungal mass like *Aspurgillus Niger* type of fungal infection, due to its antifungal property. The medicine reduces growth of fungal mass and infection of external auditory canal. (Figure No: 2 showing antifungal Activity of antifungal Arka Ear drops)

CONCLUSION

Thus it can be concluded that, Antifungal Arka Ear drops can be advised for successful treatment in patients of *Karnakandu* (Otomycosis) as it is cost effective, ease of administration and given better efficacy in treatment. By following this line of treatment one can avoid ototoxicity as it is caused by Modern Antifungal and Antibiotic steroid Ear drops. Nidana parivarjana is main treatment by Avoiding *Jalakrida & Mityayogena shastrasya* (Scratching of EAC with key, pins etc). Local and oral treatment also plays an important role in treatment of

Otomycosis.

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Table No: 1 Showing Treatment Protocol

STHANIKA	SHAMANA
<ul style="list-style-type: none"> Aural toileting followed by Antifungal Arka Ear drops 2 drops TID for 7 days. 	<ul style="list-style-type: none"> Nimbadi Guggulu 1 TID for 7 days.

Table No: 2 Showing Improvement in signs and symptoms

SL NO	SYMPTOMES	1 ST DAY	4 TH DAY	7 TH DAY
1	Itching	3	1	0
2	Pain	3	1	0
3	Aural Blockage	1	0	0
4	Fungal mass	2	1	0

Table No: 3 & 4 Showing Grading of Subjective Parameters (PNS Scale)

Symptoms	Grade – 0	Grade - 1	Grade - 2	Grade – 3
Itching	Nil	Mild(1-3)	Moderate(4-6)	Severe(7-10)
Pain	Nil	Mild(1-3)	Moderate(4-6)	Severe(7-10)

Symptom	Grade – 0	Grade - 1
Aural blockage	Absent	Present

Table No: 5 showing grading of subjective Parameters

Fungal mass	Grading
No Fungal Mass	0
Half Packed EAC with Fungal Mass	1
Full Packed EAC with Fungal Mass	2

Table 6 Ingredients:

SANSKRIT NAME	BOTANICAL NAME	FAMILY
1. <i>Nimba</i> ⁸	<i>Azadirachta Indica</i>	Meliaceae
2. <i>Karpoora</i> ⁹	<i>Cinnamomum camphora</i>	Lauraceae
3. <i>Vacha</i> ¹⁰	<i>Acorus calamus</i>	Araceae
4. <i>Haridra</i> ¹¹	<i>Curcuma longa</i>	Zingiberaceae
5. <i>Amalaki</i> ¹²	<i>Embelia officinalis</i>	Euphorbiaceae
6. <i>Chavya</i> ¹³	<i>Piper chaba</i>	Piperaceae
7. <i>Vidanga</i> ¹⁴	<i>Embelia ribes</i>	Myrsinaceae
8. <i>Guduchi</i> ¹⁵	<i>Tinospora cordifolia</i>	Menispermaceae
9. <i>Shunti</i> ¹⁶	<i>Zingiber officinalis</i>	Zingiberaceae
10. <i>Pippali</i> ¹⁷	<i>Piper Longum</i>	Piperaceae

Flow Chart No: 1 showing Mode of action of Ear drops

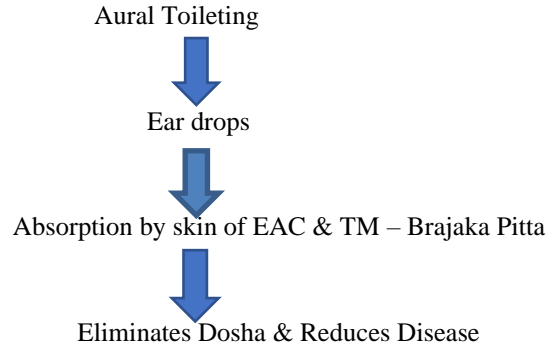


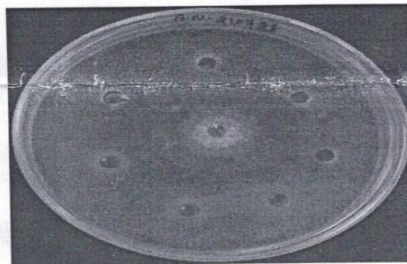
Figure 1:



Figure No: 2 showing antifungal Activity of antifungal Arka Ear drops

Table 1: *In vitro* antifungal activity of Arka & Polyherbal antifungal taila samples against *Aspergillus niger*.

Sample	Volume	Zone of inhibition – (Radius in mm)	
Arka	25 µl	0	0
	50 µl	0	0
	100 µl	0	0
Polyherbal antifungal taila	25 µl	06	06
	50 µl	07	07
	100 µl	08	08
Control (Gingelly oil)	50 µl	06	06
Standard (<i>Fluconazole</i>) 150 mg/ml	30 µl	10	10



Conclusion: Antifungal effect was seen during 5 days of incubation at the different volumes used against *Aspergillus niger*.

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