Clinical Research

A clinical study on the effect of Arka Taila in the management of Karnasrava (Otomycosis)

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Abstract

Karnasrava is the condition characterized by discharge from Karna and occurs mainly due to Avarana of Vata Dosha. Otomycosis denotes diffuse otitis externa due to fungal infection in ear. Otomycosis being one of the causes of Karnasrava was selected for the study. The present study is done on 28 patients of Karnasrava, who were grouped in to two with 14 patients in each group. Group-A was treated with Arka Taila Karnapurana and Group-B with Clotrimazole ear drops (standard control). The signs and symptoms were studied before and after treatment. Result of the study indicates that Arka Taila and Clotrimazole are equally effective in all the signs and symptoms of Karnasrava (Otomycosis).

Key words: Arka Taila, Avarana, Karnasrava, Otomycosis

Introduction

Karnasrava is a disease mentioned by Acharya Sushruta in the chapter of Karnaroga Vigyaninya under twenty eight Karnarogas.¹ Acharya Charaka included Karnasrava as a symptom under the four types of Karnarogas due to vitiation of different Dosha.² Karnasrava (discharge) is one of symptom of otomycosis. In Vranasrava Vigyaninya Adhyaya, Acharya Sushruta has described many types of Srava. Out of them Twakagata and Mamsagata Srava is in parlance with modern otomycosis.³

Otomycosis is a type of otitis externa occurring due to fungal infection. In general population, the prevalence of otomycosis is 5.2% all over world and in India 9.00% according to American academy of otolaryngology. Further 5-25% of otitis externa cases are due to otomycosis. The 90% of fungal infections involve Aspergillus species and the rest Candida species.⁴

The general line of treatment of Karnasrava includes Shirovirechana, Dhupana, Karnapurana, Pramaarjana, Dhaavana, Prakshaalana etc.⁵ In otomycosis, frequent cleaning of external auditory canal either by suction, evacuation, or by syringing, followed by mopping are advised which are very similar to treatment of Karnasrava. Further topical medications are applied as disinfectant, anti-inflammatory, and antifungal.⁶ For this study, clotrimazole has been selected as standard control. But it is having side effects like burning sensation, stinging sensation, etc. The treatment of this particular disease has never been satisfactory and therefore, a number of treatments were advised to relieve this condition. So, to overcome above problems there is a need to find cheaper and easily available Ayurvedic medicine. In the present study, Arka Taila was selected as a local therapeutic procedure for Karnapurana.

Aims and objectives

1. To assess the efficacy of Arka Taila in the management of Karnasrava (Otomycosis)
2. To compare the efficacy of Arka Taila with clotrimazole in the management of Karnasrava (Otomycosis).

Materials and Methods

Selection of patients

• The patients fulfilling inclusion criteria, attending the O.P.D. of Department of Shalakya, I.P.G.T and R.A. Hospital, Gujarat Ayurved University, Jamnagar were selected irrespective of age, sex, religion, race, occupation, etc.
• A detailed proforma was prepared incorporating Ayurvedic and Modern points. Trial drug was prepared in the Department of R.S. and B.K., I.P.G.T. and R.A., Jamnagar.

Inclusion criteria

• The selection of patients was done on the basis of signs and symptoms of Karnasrava (Otomycosis) described as per Ayurvedic and modern medical science.

Exclusion criteria

• Patients suffering from any debilitating diseases like diabetes, TB, etc. and with other aural pathology e.g. Chronic suppurative otitis media (CSOM), acute suppurative otitis
media (ASOM), perforation of tympanic membrane, etc. were excluded from the study.

**Sampling method**
- Random sampling method

**Assessment criteria**
- The efficacy of the therapy was assessed on the basis of subjective criteria, for statistical analysis scoring was designed according to the severity of symptoms.

**Overall effect of therapy**
- Cured: 100% relief in subjective and objective symptoms.
- Marked improvement: 76-99% relief in subjective and objective symptoms.
- Moderate improvement: 51-75% relief in subjective and objective symptoms.
- Mild improvement: 26-50% relief in subjective and objective symptoms.
- Unchanged: Upto 25% relief in subjective and objective symptoms.

**Group, dose and duration**
Group-A: Patients were treated with Arka Taila for Karnapuranana (approx. 10-15 ml) for hundred Matra for 15 days with an interval of 5 days.
Group-B: Patients were treated with Clotrimazole ear drops. Two drops thrice daily for 15 days.

**Follow-up of the treatment**
Patients were asked to attend the O.P.D. for 1 month after completion of therapy for the follow up.

**Statistical test**
The data obtained on the basis of observations was subjected to statistical analysis in terms of mean, standard deviation error by applying the unpaired ‘t’ test. The results were interpreted at the level of $P<0.001$ as highly significant, $P<0.05$ or $P<0.01$ as significant, and $P>0.01$ as insignificant.

**Preparation of Arka Taila**
Arka Taila contains only three drugs viz. Arka Patra (Calotropis procera), Haridra (Curcuma longa) and Sarsharpa Taila Brassica campestris). Arka Taila was prepared by general method of preparation of Taila Kalpana till the Kharapaka stage. Arka Taila has Katu and Tikta Rasa, Raksha, Laghu, Tikshna Guna, Ushna Veerya, Katu Vipaka, and Kapha-Vatashamaka properties.

**Discussion**
Karnasrava is explained as a symptom and as a disease in Ayurveda. While describing the etiological factors of Karnasrava, Aacharya have given special emphasis to Jalanimanjana and Karnakandu which is commonly found in otomycosis. In Sampripti of Karnasrava, Aacharya Sushruta has mentioned that Avarana of Vata by other Dosha is the chief culprit for initiation of the pathology.
Table 1: Effect of therapy in Group-A on signs and symptoms in 13 patients of Karnasrava (otomycosis)

| Symptoms          | n   | Mean       | %    | S.D. | S.E. | t'  | P     |
|-------------------|-----|------------|------|------|------|-----|-------|
| Karnasrava        | 10  | 1.4167     | 0.1667 | 88.235 | 0.866 | 0.25 | 5     | <0.001 |
| Karnashula        | 13  | 1.375      | 0.0625 | 90.91  | 0.5774 | 0.1443 | 8.6603 | <0.001 |
| Karnakandu        | 12  | 2.6667     | 0.2667 | 90     | 1.0556 | 0.2726 | 8.8056 | <0.001 |
| Badhirya          | 10  | 1.6429     | 0.10714| 34.783 | 0.5136 | 0.1373 | 4.1633 | <0.01  |
| Karnanada         | 09  | 1.2308     | 0.3077 | 68.75  | 0.3755 | 0.1042 | 8.124  | <0.001 |
| Karnapratinaha    | 12  | 1.5714     | 0.4286 | 72.72  | 0.2059 | 0.2059 | 5.5511 | <0.001 |
| Tenderness        | 06  | 1          | 0     | 100   | -     | -   | -     |       |
| Fungal mass       | 13  | 1.2941     | 0.2941 | 77.27  | 0.6124 | 0.1485 | 6.733  | <0.001 |
| Erythema          | 01  | 1.5        | 0     | 100   | 0.5345 | 0.189 | 7.9373 | <0.001 |

Table 2: Effect of therapy in Group-B on signs and symptoms in 13 patients of Karnasrava (otomycosis)

| Symptoms          | n   | Mean       | %    | S.D. | S.E. | t'  | P     |
|-------------------|-----|------------|------|------|------|-----|-------|
| Karnasrava        | 12  | 1.3846     | 0     | 100   | 0.6112 | 0.1695 | 8.1674 | <0.001 |
| Karnashula        | 10  | 2          | 0     | 100   | 0.9189 | 0.3063 | 6.5293 | <0.001 |
| Karnakandu        | 12  | 3.0714     | 0.1429| 90.69  | 1.3522 | 0.3614 | 7.7081 | <0.001 |
| Badhirya          | 10  | 1.0909     | 0.3636| 66.667 | 0.4924 | 0.1485 | 4.899  | <0.001 |
| Karnanada         | 07  | 1          | 0     | 100   | 0.378 | 0.1543 | 6.4807 | <0.01  |
| Karnapratinaha    | 11  | 1.6923     | 0.3077| 81.818 | 0.7263 | 0.2014 | 6.8739 | <0.001 |
| Tenderness        | 04  | 1.75       | 0     | 100   | 0.8944 | 0.4472 | 3.9131 | <0.05  |
| Fungal mass       | 13  | 1.125      | 0.1875| 83.333 | 0.6002 | 0.1501 | 6.2474 | <0.001 |
| Erythema          | 04  | 1.25       | 0     | 100   | 0.7071 | 0.3536 | 3.5355 | <0.05  |

Figure 1: Overall effect of therapy

By assessing the symptoms, it can be said that Kapha Aavrita Vata Dosha is responsible for the manifestation of clinical features like discharge, pain, itching, etc. of otomycosis. In otomycosis, mainly watery and purulent type of discharge is present which shows the condition of Paka. While removing the fungal mass, ulceration of external auditory canal is likely to happen. Considering these points otomycosis can also be treated in the line of Dushtavrana. Regarding Sadhyasadhyata, Acharya has mentioned that Vrina situated in Tavaka and Mamsa and Vrana lies in Karna is Sukhasadhya.[10] In Uttaratantra, Acharya Sushruta considered Karnasrava itself as Sadhyaroga.

The mode of action of the drug under trial can be understood on the basis of inherent properties of the drugs.

Rasa of all the drugs are Katu and Tikta; Guna are Raksha, Laghu, Tikshna; Snigdha and Ushna Veerya and mainly Kapha-Vata Shaamaka properties.

With the properties of Katu and Tikta Rasa, it will encounter Vata and Kapha Dosha. The Kattu Rasa removes obstruction, dilates the passages, and relieves Kapha.[11]

Tikta Rasa induces cleanness, dryness, and keenness. With Krimihara and Piyashoshanakara properties it will help to remove ear debris, fungal mass, discharge, and reduces itching. Tikta Rasa contains Shodhana property which can help to open channels and clean the wound, ultimately leads healing process. Raksha Guna is having Shoshana Shakti which can absorb the discharge in auditory canal and pacifies the Kapha Dosha. Lagha Guna having Lekhana and Rojana properties which can help in healing of wound. Tikshna Guna is Shighrakari which means it starts action very quickly and will encounter Vata and Kapha Dosha. Due to Ushna Veerya it will encounter Vata Dosha and Gati of Vata gets normalized (Anulomana). This way it will work on functional mechanism. Another benefit of Ushna Veerya is that it enhances local as well as general metabolism. Because of this, it will correct Dhatuspashana Krama and ultimately it will leads to production of Uttama Twaka and Mamsa Dhatu.

**Conclusion**

On the basis of clinical features, otomycosis can be correlated...
with Karnasrava having predominance of Vata and Kapha Dosha. For Karnapurana Taila should be prepared till the stage of Kharapaka. Karnapurana is very effective local procedure in Karnagata Roga. Sufficient amount (approximately 10-15 drops) of Arka Taila should be instilled (Karnapurana) to get expected results. Arka Taila has not shown any side effect so it should be used. Both the drugs (Arka Taila and Clotrimazole) are equally effective to treat the disease Karnasrava (Otomycosis). Arka Taila Karnapurana for duration of 15 days (minimum 6-10 days) is sufficient for the treatment of the disease Karnasrava (Otomycosis), provided proper Pathyapathy should be followed. As Vrana is always present in patient of Karnasrava-otomycosis, Dushtavrana Chikitsa can be adopted in treatment of Karnasrava. Shashti Upakrama can be incorporated in treatment of Karnasrava (otomycosis) in further study on a larger sample.

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हिंदी सारांश

कर्णस्राव (ओटोमायकोसीस) में अर्कतेल का प्रयोग

कर्णस्राव मुख्यतः बात कप्त दोष से होता है। कर्ण से साख होना इसका मुख्य लक्षण है। ओटोमायकोसीस कर्णस्राव का एक कारण होने से उसे अध्ययन के लिए पुना गया है। इस अध्ययन कर्णस्राव (ओटोमायकोसीस) के 6 रोगियों को दो समूहों में विभाजित किया गया। समूह – ए में 93 रोगियों को अर्क तेल कर्णसूरक के रूप में दिया गया, जबकि समूह – बी में 93 रोगियों को क्लोट्रिमाइजोल (क्लर्ड) इंयर ड्रोप रिटाइर ग्राफ के तौर पर दिया गया। रोगी का पंजीकरण करने के बाद कर्णस्राव के लक्षण जैसे कर्णस्राव, कर्णशूल, कर्णकंडु, कर्णान्द, कर्णपलिनाद और बादियों की धिक्कता के पहले और बाद में देखा गया। धिक्कता के परिणामों से देखा गया कि, अर्क तेल और क्लोट्रिमाइजोल सभी लक्षणों में समान रूप से प्रभावी है।