

## KARNAPOORANA IN PRESBYCUSIS – A REVIEW

<sup>1</sup>Dr Kiran.C. Sheelvant <sup>2</sup>Dr Pradeep Kumar.K

<sup>1</sup>PG Scholar, <sup>2</sup>Professor and Head Department of PG Studies in  
Shalakya Tantra, AAMC.

### ABSTRACT

Presbycusis is one such condition characterised by hearing loss associated with degenerative effects of aging. It usually manifests at the age of 65yrs but may occur early if there is hereditary predisposition, chronic noise exposure or generalised vascular disease. In India 63 million people suffer from auditory hearing loss, contributing to psychological and social isolation of elderly people by restricting their usage of phone, causing them to forfeit social events such as concerts and social gatherings and amplifying their sense of disability. Hearing loss can be corrected by use of hearing aids. Hearing aids forms partial solution, due to many reasons such as low custom design, improper amplification adjustments and some people do not buy aids due to high- cost, which does not meet their needs. In the classics of Ayurveda, Presbycusis can be described as Vardhakyajanya Badirya (senile deafness). Srotrendriya is the seat of vata and Badirya is caused due to vitiation of vata alone or vata and kapha. Karnapurana (instillation of medicated oil into the external auditory canal), having the opposite guna, counteracts vata dosha and is considered to be effective in the management of presbycusis.

**KEYWORDS:** Presbycusis, Badirya, Karnapoorana

### INTRODUCTION

Hearing loss is the most common sensory deficit associated with senescence and is likely to become more of an issue with the changing population demographics in the developed and developing countries. The prevalence of presbycusis rises with age, about 30-35% aged 65 and 40-45% of people aged 75 and older have hearing loss.<sup>1</sup> Presbycusis may have a negative impact on psychological wellbeing, leading to social isolation, depression, anxiety and cognitive impairment. Occurrence of presbycusis is thought to be determined predominantly by genetic factors, however can also be influenced by environmental factors, such as

noise, ototoxic drugs, alcohol, diabetes mellitus and hypertension. Commonly arises from the degenerative changes in the inner ear, less commonly from middle ear or from complex changes in the nerve pathway. The loss associated with presbycusis is usually greater for high pitched sounds. Treatment for presbycusis mainly includes appropriate hearing aids, speech reading through visual cues.<sup>2</sup> However it has its own drawback and limitations.

In the classics of Ayurveda, presbycusis can be considered as vardhakyajanya Baadirya (senile deafness), one of the karnagata roga having the symptom of reduced hearing. Hearing loss is either due to disturbance of

vata dosha alone or vitiation of vata kapha together.<sup>3</sup> Shravanendriya is one among the indriya's, the foremost specialised sense of hearing of the origin of aakash mahabutha. Acharaya vagbhatta quotes that, srotrendriya/shravanendriya is the seat of vata and baadiryaa is caused due to vitiation of vata dosha. Here, avashyaya (cold), jalakreeda (swimming) and vardhakya (senility) are the main etiological factors for vitiation of vata and kapha. Vitiation of vata can cause damage to the auditory nerve and nerve endings and lead to hearing loss and ringing in ear. Vitiating kapha dosha causes obstruction of the sabdavaha srotas (sound pathway), thereby together leading to presbycusis, which can be prevented by practising karnapoorana, a procedure of filling the ears with warm taila, swarasa, or gomutra.<sup>4</sup> This is indicated in conditions like tinnitus, and hearing impairment. Acharya Charaka has included this procedure in one of the sneha pravacharana (different modes of administration of oil/fat) and also mentioned that daily practise of karnapoorana prevents the diseases of ear and alleviates vata dosha.

### Physiology of Hearing<sup>5</sup>

It is a series of events in which the sound waves are converted into mechanical energy and then transduced to electrical signals, which produces nerve impulses that is sent to brain where they are interpreted as sound. The ear has three main parts: the outer, middle, and inner ear. The outer ear collects sound waves and works like a funnel to send them through a narrow tube (ear canal) that leads to the middle ear, where they cause the vibration of the ear drum. These vibrations

are transmitted through the three tiny bones in the middle ear, called the ossicles. These bones are called the hammer (malleus), anvil (incus), and the stirrup (stapes). The ear drum and ossicles amplify the vibrations. The stirrup transmits the amplified vibrations through the oval window and into the inner ear. The inner ear is filled with a thin fluid that transmits pressure changes throughout the cochlea. Inside the cochlea are tiny hair cells that pick up sound vibrations from the fluid and cause nerve impulses in the auditory nerve. The auditory nerve carries the message to the brain, where it is interpreted as sound.

A healthy human ear can hear frequencies ranging from 20-20000 Hz.

### Causes of Presbycusis

Presbycusis is a sensorineural hearing disorder commonly caused due to gradual changes in inner ear.

- Repeated exposure to daily traffic sounds, construction work.
- Exposure to noisy instruments.
- Loud music
- Hereditary factors
- Side effects of some medicines (ototoxic drugs)
- Systemic diseases, like diabetes and hypertension.

### Symptoms of Presbycusis<sup>6</sup>

- The speech of others seems mumbled or slurred.
- High-pitched sounds such as “s” and “th” are difficult to hear and tell apart.
- Conversations are difficult to understand, especially when there is background noise.

- A man's voice is easier to hear than the higher pitches of a woman's voice
- Certain sounds seem annoying or overly loud.
- Tinnitus (a ringing, roaring, or hissing sound in one or both ears).

### Karnapoorana

Acharya charaka & vagbhata advocated that karnapoorana should be done daily to avoid the diseases of ear. Acharya sushruta has mentioned karnapoorana in swasthavritiya adhyaya.

### Procedure:<sup>7</sup>

#### Purvakarma:( pre-requisite procedure)

**Preparation of patient:** The patient should be made to lie down in right or left lateral position depending on the affected side.

**Karna abhyanga:** Gentle massage should be done with luke warm medicated oil around the ear, including pre-auricular, post-auricular and lateral portion of neck region, for a short period of time.

**Swedana:** Mild hot fomentation is given with a towel soaked in boiling water by waving, touching and pressing for some time (approx.10 min)

#### Pradhanakarma: (Main procedure)

1. Medicated oil should be gently warmed.
2. The external auditory canal should be straightened by pulling the pinna backwards and upwards.
3. The oil should be poured in drops till the ear canal is filled up to the base of concha.
4. The root of ear should be gently massaged.
5. The oil should be retained in the same position for 100 matras.

### Paschat karma :( post procedure)

1. The excess oil should be taken out of external auditory canal by dry cotton.
2. After retaining the oil for a fixed time, the ear should be cleaned with dry cotton.
3. In case of both ears, the same procedure should be repeated in other ear also.

### Duration for procedure:

DISEASES	MATRA KALA
Karna Roga	100
Kantha Roga	500
Shiro Roga	1000
Swastha	100

### DISCUSSION

Occurrence of presbycusis is predominantly determined to be environmental factors like repeated exposure to loud sounds for an extended period of time.

Loss of hearing may be profound with the consequences for social, functional and psychological wellbeing of a person and this is how a deaf drowns in to the sea of silence.<sup>8</sup>

The degenerative changes that occur in the cells of organ of corti and nerve fibres result in a slow progressive deafness which may be associated with tinnitus.<sup>9</sup>

### Probable Mode of action:<sup>10</sup>

#### Karnaabhyanga (massage of the ear):

- Before karnapurana, abhyanga is specifically done to Murdha pradesha which causes vasodilation in the skin and muscles by stimulating receptors of the sympathetic nervous system.
- Vasodilation increases blood flow and helps to remove toxic products.

- Abhyanga done for sufficient time; the oil reaches the different dhatus by absorption. Dalhana has stated that when sneha reaches the particular dhatu it subsides that particular vitiated dhatu.
- Hence it subsides the vata dosha and prevents ear disease.

#### **Swedana (mild fomentation):**

- According to Acharya Charaka, swedana karma by the virtue of its gunas like-ushna, sara, snigdha, sukshma and sthira, which are opposite qualities to that of vata, helps in pacifying vata and absorption of oil.<sup>11</sup>
- By its ushna guna, improves blood circulation.

#### **Karnapurana (instilling medicated oil in to external auditory canal):**

- Karna(ear) is said to be the seat of vata dosha and is responsible for hearing mechanism.<sup>12</sup>
- Sneha dravyas specially taila's are used for karnapurana. Taila alleviates vata dosha but does not aggravate kapha and it promotes bala.<sup>13</sup> By the virtue of its guna-ushna, tikshna, snigdha and vrushya, pacifies vata and kapha dosha.

#### **CONCLUSION:**

Karnapoorana is a process of instilling medicated oil into the external ear. Among the sneha dravya's mainly taila is used for karnapoorana which has the property of vrishya (delaying aging) and vatahara, which prevents presbycusis (vardhakyajanya baadiryaa) caused due to the predominance of vata dosha.

Presbycusis occurs due to degenerative changes in the inner ear, mainly due to vitiation of vata dosha. Treatment for presbycusis in majority of the cases includes appropriate hearing aids, which is a partial solution of the problem and having its own limitations and drawbacks. Oleation by karnapurana helps to maintain disharmony of vata dosha and prevent presbycusis.

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### **CORRESPONDING AUTHOR**

Dr Kiran.C. Sheelvant  
PG Scholar, Department of PG Studies in  
Shalakyata Tantra, AAMC  
Email: kinu156@gmail.com

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