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## Critical Analysis of *Badhirya* with special reference to Hearing Loss

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### ABSTRACT

*Maharshi Sushruta* has mentioned 28 types of *Karna-Roga* in *Uttar Tantra* and *Badhirya* is one among them. *Badhirya* is caused due to the vitiated *Vata Dosha* or *Vatakapha Doshas* by deranging or obstructing the *Shabdavaha Srotas* (pathway of hearing) or *Shabdavaha Sira* (auditory nerve) or due to negligence of *Karnanada* etc and gives rise to diminished hearing or incapability of hearing. Deafness is defined as a partial or complete inability to hear. Defect at any level from sound transduction to interpretation can cause hearing loss. Therefore, deafness (hearing loss) can be considered under the caption of *Badhirya*. In the present study, a review is presented on *Badhirya* and hearing loss to enlighten the correlation and thus providing an alternative treatment option for hearing loss.

### KEYWORDS

*Vata, Kapha, Badhirya, Hearing Loss*



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## INTRODUCTION

*Shalaky* is an important branch of *Ayurveda* which deals with the diseases manifesting above clavicular region. *Aacharya Susrutha* is the only person who explained Ophthalmology and ENT in a systematic manner in *Uttara tantra* portion of his treatise *Sushruta Samhita*.

*Aacharya Sushruta* has mentioned 28 types of *Karna-Roga* in *Uttar Tantra* and *Badhirya* is one of them<sup>1</sup>. According to *Ayurveda*, *Shrotrendriya* originates from *Akasha Mahabhoota*. *Shabda* (sound) travelling through *Vata* in the presence of *Aakasha* (space) comes in contact with *Shrottendriya Adhishthana (Karna)* and transmitted through *Shrottendriya* to the *Shravana Buddhi* which is responsible for perception of sound. So, *Vata* plays important role in normal hearing procedure. According to *Aacharya Sushruta*, vitiated *Vata Dosha* along with *Kapha* resides in *Shabdhanuvaha Sira* and in the absence of appropriate treatment the person will suffer from *Badhirya* without any doubts<sup>2</sup>. *Acharya Dalhana* comment on this *Samprapti* that not only *Vata Dosha* but also *Rakta, Pitta* and *Kapha Doshas* also reside in *Shabdhanuvaha Sira* causing *Badhirya*<sup>3</sup>. According to *Aacharya Vagbhatta*, *Vata* associated with *Kapha* and getting increased or by neglect of

*Karnanada*, gives rise to hearing of loud sounds only, hearing with difficulty and gradually leads to deafness<sup>4</sup>.

Hearing loss or hearing impairment is a partial or entire inability to hear. It can result in hearing conversational speech or loud sounds with difficulty. It can be unilateral or bilateral. Disabling hearing loss refers to hearing loss more than 40 decibels (dB) in the better hearing ear in adults and a hearing loss more than 30 dB in the better hearing ear in children. 'Deaf' people have profound hearing loss mostly which indicates very little or no hearing. They generally use sign language for communication<sup>5</sup>.

Deafness can be divided basically into three types- sensorineural, conductive and mixed. A sensorineural hearing loss results from lesions of the cochlea, VIII<sup>th</sup> nerve or central auditory pathways. Conductive hearing loss occurs when there is problem in external or middle ear which interferes with conduction of sound to the inner ear. Mixed hearing loss occurs when both conductive and sensorineural hearing loss are present.

Low and middle-income countries have great number of people with disabling hearing loss. Over 5% of the world's population or 466 million people have disabling hearing loss (432 million adults and 34 million children). It is estimated that



by 2050, over 900 million people or one in every 10 people will have disabling hearing loss. Approximately one third of people over 65 years of age are affected by disabling hearing loss<sup>6</sup>.

### **Nidana**

The specific etiology of each *Karnaroga* is not mentioned in any *Ayurvedic* classics, certain common etiological factors of *Karnaroga* are described which are – *Avasyaya*, *Jalakrida*, *Karnakandu*, *Mithya yogensastrasya*, and *Pratisyaya*<sup>7</sup>. While going through *Sushruta Samhita* the following *Nidana* were described to cause

the disease *Badhirya* which were described in different chapter in the contexts of some special disease or references in different *Sthana* of *Sushruta Samhita*.

- By trauma on *Vidhura Marma*<sup>8</sup>
- By installing *Vishana* tail in ear<sup>9</sup>
- By *Dosha* of *Shukra* and *Shonita* in *Janambala Pravrita Rogas*<sup>10</sup>
- Due to *Karnarsha*<sup>11</sup>
- Due to hearing of profound sound in *Ritu Kala*<sup>12</sup>
- Because of *Ardita*<sup>13</sup>

Causes of hearing loss in modern science are as mentioned in table 1<sup>14</sup> –

**Table 1** Causes of Hearing loss

<b>Conductive Hearing Loss</b>	<b>Sensorineural Hearing Loss</b>
<u>Congenital causes-</u> <ul style="list-style-type: none"> <li>• Meatal atresia</li> <li>• Fixation of stapes footplate</li> <li>• Fixation of malleus head</li> <li>• Ossicular discontinuity</li> <li>• Congenital cholesteatoma</li> </ul>	<u>Congenital causes-</u> present since birth due to anomalies of the inner ear or damage to the hearing apparatus by prenatal or perinatal factors
<u>Acquired causes-</u> <p><b>External ear</b>            Any obstruction in the ear canal, e.g. wax, foreign body, furuncle, acute inflammatory swelling, benign or malignant tumour or atresia of canal.</p> <p><b>Middle ear</b></p> <ul style="list-style-type: none"> <li>● Perforation of tympanic membrane</li> <li>● Fluid in the middle ear</li> <li>● Mass in middle ear</li> <li>● Disruption of ossicles,</li> <li>● Chronic suppurative otitis media</li> <li>● Cholesteatoma</li> <li>● Fixation of ossicles</li> <li>● Eustachian tube blockage</li> </ul>	<u>Acquired causes-</u> <ul style="list-style-type: none"> <li>● Infections of labyrinth</li> <li>● Labyrinth or VIII<sup>th</sup> nerve trauma</li> <li>● Noise-induced hearing loss</li> <li>● Ototoxic drugs</li> <li>● Presbycusis</li> <li>● Ménière's disease</li> <li>● Acoustic neuroma</li> <li>● Sudden hearing loss</li> <li>● Familial progressive SNHL</li> <li>● Systemic disorders, e.g. diabetes, hypothyroidism, kidney disease, autoimmune disorders, multiple sclerosis, blood dyscrasias</li> </ul>

### **Chikitsa**

*Acharya Sushruta* has mentioned general line of treatment for *Karnaroga*. It comprises of *Snehana*, *Swedana*, *Ghritha pana*, *Rasayana Sevana*, not to do excessive work, to take bath except head,

not to indulge in intercourse, not to talk excessively<sup>15</sup>. *Acharya Charaka*<sup>16</sup> and *Acharya Vagbhata*<sup>17</sup> had advocated daily *Karnapurana* to avoid the diseases of the ear. Treatment modalities mentioned for

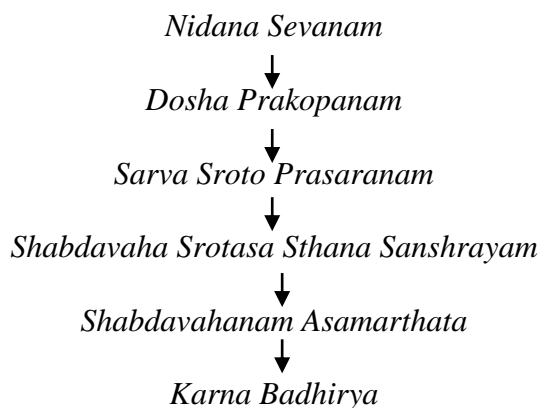


*Badhirya* are *Snehavirechana*, *Raktamokshana*, *Bastikarma*, *Murdhabasti*, *Nasya*, *Dhupana* etc<sup>18</sup>. According to *Acharya Vagbhatta* poor hearing associated with *Sopha* and *Kleda*, should be given *Vamana* therapy<sup>19</sup>. Deafness found in *Bala*, *Vridha* and that persisting for a long time is not treatable<sup>20</sup>.

According to modern science treatment of hearing loss depends on the specific cause

if known as well as the extent, type and configuration. Most of hearing loss resulting from age and noise are progressive and irreversible. Some types of hearing loss, mainly conductive types, can be medically or surgically corrected but others cannot. Commonly used treatment modalities for sensorineural hearing loss are properly fitted hearing aids, cochlear implants and other assistive devices.

### ***Samprapti***



### ***Samprapti Ghataka***

<i>Nidana</i>	<i>Vata &amp; Kapha Prakopaka</i>
<i>Dosha</i>	<i>Vata</i>
<i>Dushya</i>	<i>Rasa</i>
<i>Srotasa</i>	<i>Shabdavaha</i>
<i>Sroto Dusti</i>	<i>Vimarga Gamana</i>
<i>Dosha Marga</i>	<i>Bahya</i>
<i>Adhisthana</i>	<i>Karna</i>
<i>Pratyatma Lakshana</i>	<i>Badhirya</i>

### ***Pathyapathya***<sup>21</sup>

*Pathya Ahara* includes *Godhuma*, *Shali*, *Mugda*, *Yava*, *Patola*, *Shigru*, *Vartaka*, *Sunnishanaka*, *Kanttilaka*, *Purana Ghrita*

and *Mamsa* of *Lava*, *Mayura*, *Harina* and *Kukkuta* etc. Patients should practice *Brahmacharya* and *Abhashanam*. They should follow *Dinacharya* and *Ritucharya*



including *Snehana*, *Swedana*, *Virechana*, *Vamana*, *Nasya* and *Rasayana*.

*Ahara Dravyas* predominant in *Guru Guna* and which leads to increase in *Kapha* should be avoided. Head bath, vigorous brushing of teeth, physical exertion, exposure to humid climate, scratching the ear etc. should also be avoided.

## DISCUSSION

*Aacharya Sushruta* has mentioned the disease *Badhirya* under the caption of

**Table 2** Types of *Badhirya*

Sr. No.	Dosha predominance	Involvement of ear parts	Types of deafness
1	<i>Kaphanubandha</i>	<i>Bahya Karna</i> (External Ear) <i>Madhya Karna</i> (Middle Ear)	Conductive
2	<i>Vatanubandha</i>	<i>Antah Karna</i> (Internal Ear) <i>Shabdavaha Nadi</i> (Cochlear Nerve and higher center)	Perceptive (Sensorineural)
3	<i>Kaphavatanubandha</i>	<i>Bahya Karna</i> (External Ear) <i>Madhya Karna</i> (Middle Ear) <i>Antah Karna</i> (Internal Ear) <i>Shabdavaha Nadi</i> (Cochlear Nerve and higher center)	Mixed

All the *Nidanas* mentioned for *Karnaroga* vitiates *Vata* and *Kapha Dosha* like excessive exposure to *Avasyaya* and its *Sheetatwa* property, the function of auditory nerve may be affected, leading to sensory neural deafness. *Jalakrida* having *Seetha* in property, lead to *Kapha* and *Vata* vitiation which cause imbalance in Na-K-2Cl ion that may lead to abnormality in formation of endolymph and perilymph that may cause neural deafness<sup>22</sup>. Moreover the causes of conductive hearing loss like wax, otitis media, any growth, cholesteatoma etc all have abnormalities of *Kapha Dosha*.

*Karnagata Roga*. The vitiated *Vata Dosha* or *Vata Kapha Doshas* by deranging or obstructing the *Shabdavaha Srotas* (auditory canal) or *Shabdavaha Sira* (vessels) and *Shabdavaha Nadi* (nerves) or neglecting *Karnanada* etc. diseases causes difficulty in hearing or incapability of hearing i.e. *Badhirya*. Therefore *Badhirya* can be of three types-

When there is disturbance in *Vata Dosha*, sound is not conveyed from ear to brain. In some cases vitiated *Kapha* obstructs the *Vata* pathway because of which *Vata* fails to conduct the sound waves. Therefore the hearing ability of one goes on deteriorating gradually and can be lost completely. *Snehana* is mentioned in treatment of *Badhirya*, which can be administered by two ways – external and internal. *Karnapurana* come under the external *snehana*<sup>23</sup>. Generally medicated oil is used for *Karnapurana* as *Taila* is having virtue of *Vata Shamana* but do not aggravate





*Kapha*. In addition medicine is used as luke warm, so it has beneficial effect not only on *Vata* but also removes *Avarana* of *Kapha*, thereby helps in reducing *Badhirya*. In all types of *Karna rogas*, *Ghrita Pana* is indicated according to *Ayurvedic* classics. *Ghrita Pana* comes under internal *Snehana*. With the administration of *Snehana dravyas*, the *Vayu* is eliminated & *mridutva* in the body is produced. The vitiated *Doshas*, which obstructs the *srotas*, are eliminated with the help of *snehana*<sup>24</sup>. It is explained that *Nasa* being doorway to *Shirah*, the drug administered through nostrils reaches *Sringataka* by *Nasa Srota* and spreads in the *Murdha* (Brain), taking routes of *Netra* (eyes), *Shrotra* (ears), *Kantha* (throat) *Sira Mukhas* and removes the morbid *Doshas* from *Urdhwajatrugata* completely just like the removing *Munja* grass from its stem<sup>25</sup>. *Nasya* therapy helps in removal of *Srotas* obstruction and *Shamana* of vitiated *Doshas*. Before the *Nasya* and *Karnapurana*, *Sthanika Abhyanga* and *Swedana* is given which helps in stimulation of vasodilator nerves which are spread out on the superficial surface of face, this increases the blood circulation to the brain. As mentioned earlier, *Badhirya* occurs due to vitiation of *Vata* and *Kapha – Pitta- Rakta Doshas* which resides in *Shabdhanuvaha Sira* and as per *Aacharya Susrutha*, in *Siragata Vata*

*Raktamokshana* is indicated. Therefore *Raktamokshana* can be an effective therapy in *Badhirya*. *Basti* is main treatment modality for *Vataja Roga* and *Badhirya* is *Vata* dominant disease. Similarly *Shirobasti* helps in pacifying *Vata Dosha* by giving strength to the nervous system.

## CONCLUSION

It can be concluded that hearing loss of modern science comes under the caption of *Badhirya* in *Ayurveda*. Considering the limitations of treatment in cases of sensorineural hearing loss, presbycusis, and other varieties of mild to moderate deafness, above mentioned *Ayurveda* treatment modalities of *Badhirya* may prove beneficial.



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