

A CRITICAL ANALYSIS OF PRESBYACUSIS OR AGE-RELATED HEARING LOSS (AHL) WITH RESPECT TO VARDHYAKYAJANYA BHADIRYA – AN AYURVEDA PERSPECTIVE

¹Dr Vivek G K ²Dr Gavimath Shivanand

¹Assistant Professor, Department of Shalaky Tantra ²Professor & H O D, Department of Shalaky Tantra, J S S Ayurveda Medical College, Mysuru-Karnataka, India.

ABSTRACT

Changing life style in this busy modern world has resulted in many ear diseases which make one's life miserable. Presbycusis or Age-related hearing loss is an inevitable deterioration in hearing ability with age. It is much evident that, Ayurveda the Science of life has given much emphasis on preventive aspects. Various Procedures & Medications have been listed in ancient Ayurvedic Texts to maintain proper functioning of our body organs and mind. This work is intended to look into various therapeutic procedures which we can adopt them as prophylactic measures to delay the natural aging process with special reference to Age-related hearing loss. Procedures like Shiroabhyanga Sthanika Karna Abhyanga, Swedana, Karna-Poorana, Nasya Karma are helpful and effective in maintaining normal hearing status.

KEYWORDS: Bhadirya, Presbycusis, Karna Abhyanga, Karna poorana, Nasya Karma.

INTRODUCTION

Presbycusis or Hearing loss in the aged is bilaterally symmetrical, and multifactorial in origin with both intrinsic factors as well as environmental factors being responsible^{1,2,3}. It limits the ability to hear high frequency sounds. The person fails to understand speech and thereby loses his ability to communicate by means of sound. Presbycusis patients face various difficulties in carrying out the activities of daily life and may lead to depression among the individuals, psychological and social isolation. As per the WHO publication 2007⁴ Presbycusis has high prevalence of 10.3% in India. It is a type of sensorineural deafness due to old age. Modern science advises anti-oxidants, Vitamins and Hearing

information and impaired localization of sound sources, and natural deterioration in hearing. Age-related hearing loss occurs in elderly people in their 60s and in 50% of people in the over 70 age group. Predisposing factors include metabolic disorders, cardiovascular disease, occupational and leisure noise exposure, ototoxic medications and Genetic predisposition. The external factors are preventable to a large extent. The diagnosis of presbycusis is based on the medical history and physical examination. The ability to locate the sound source deteriorates in both ears of patients with presbycusis with a mild-to-moderate hearing loss in the high-frequency range.

Sex Distribution of Hearing Loss:

Globally, males are reported to be more commonly affected than females (In India male to female ratio is 1:5). This also appears to be true for countries⁶ of the South East Asia Region. The reason for this difference is unclear. Higher prevalence of deafness among males is attributed to the effects of noise due to the out-door nature of work performed by men.

Prevalence⁴ : Hearing impairment in the elderly or presbycusis can start from the age of 50 years and is most prevalent in the South East Asia Region study (4.1 to 10.3% of the population have hearing loss from non-infectious causes, of which ageing is apparently the most prominent). The major causes of hearing loss and ear diseases in India have been listed by the WHO Survey. presbycusis was the second most common cause of reversible hearing loss in India (10.3%).

Pathology: With progressing age, the microscopic hair cells in the cochlea undergo degeneration. This damage to the hair cells causes hearing loss. Potential sites of pathology include the inner and outer hair cells, the stria vascularis. Most people of older age group who experience hearing loss have a combination of both age-related hearing loss and noise-induced hearing loss. It can be difficult to distinguish age-related hearing loss from other causes in aged.

Prevention: It is not possible to prevent the age-related hearing loss. However certain steps decrease the condition from getting worse. Some precautions are, avoiding repetitive exposure to loud sounds, wearing ear protection in places where there are loud sounds, controlling the blood sugar in

Diabetic subjects, avoiding the ototoxic drugs etc.

Treatment: Improving the hearing and better quality of life can be achieved with the Hearing aids, addressing the predisposing conditions, administering vasodilators, vitamins and anti-oxidants. Cochlear implant may be considered in advanced bilateral cases after proper evaluation.

Presbycusis and Vardhyakyajanya Bhadiryā :

Vagbhata says Vata associated with Kapha and getting increased or by neglecting the *Karna Nada* (Tinnitus) leads to the condition where the person hears the sound with difficulty even though it is loud, this condition gradually end up with *Bhadiryā*⁷. So this condition can be comparable with Presbycusis which is progressive in nature, occurs due to age, noise exposure and association with tinnitus. *Bhadiryā* is one among 80 *Vataja Nanathmaja Vyadi*⁸ described in Ayurvedic classics. Common etiological factors of *Karna roga* explained in classics⁹ are i) *Avashyaya* (exposure to mist, fog for longer duration), leads to the vitiation of Kapha, Vata and produces ii) *Karnakandu* (itching in the external auditory canal). Due to this the patients are stimulated to clean the ear in an effort to relieve itching that in turn leads to abrasions in the external auditory canal and this makes a route for infection. iii) *Jalakreeda* (Swimming or taking bath in polluted water) leads to kapha vata vitiation. It moistens the ear wax and deranges the natural defence mechanism. iv) *Mithyayoga* of shastra (Improper handling of instruments by unskilled persons) may cause damage the tympanic membrane. v) *Mithyayoga* of

shabda (Exposure to abnormal sounds), *Vaya or jara* (aging process) causes *dhatukshaya* (depletion of tissues) and improper functioning of *Sravanendriya*.

Because of these *Nidanas*, *Vata* alone or in association with *Kapha* becomes vitiated and localizes in *Shabdavaha Srotas* and causes *Bhadiryā*^{10,11}. So *Bhadiryā* may be purely due to *Vata* (*Vataja*), *Kapha* (*Kaphaja*) or due to both (*Vata-Kaphaja*).

Ayurveda classifies *Vaya* into three stages viz, *Balyavastha* (childhood), *Madhyama avastha* (Middle age) & *Vruddhavastha* (old age). In *Vruddhavastha*, *Vata* is predominant dosha. As a part of aging, *saptha dhatus* like *rasa, raktha*, etc. & *ojas* undergo *kshaya* (loss of tissues). This *dhathu & ojo kshaya* leads to *Vata vruddi* and improper functioning of *Shravanendriya*.

Chikitsa.

Acharya Sushruta advocates the following treatment protocol.¹²

Grutapana followed by *Rasayana Chikitsa*, *Sneha Virechana* with *Snigdha dravyas* & *Swedana* with *Vatahara dravyas*. Acharya Vagbhata says *Bhadiryā* occurring in *Vridha* is *Varjya*¹³ (avoid treating them). Even though it is said to be incurable, to check the progression of the degenerative aging process and to provide the patients a better quality of life, we can adopt the management which is mentioned for other similar rogas with same dosha involvement like *karnanada, pratishyaya, vatavyadi*. Both Sushruta and Vagbhata advises *Vataja Karna shoola Chikitsa, karnanada chikitsa* and *Pratishyaya chikitsa* in *Bhadiryā*. If there is predominance of *Kapha*, It should be expelled out first by *Vamana, Nasya* and *Teekshna Dhoopana*¹⁴.

SNEHANA (Oleation) : Sushruta advises *Grutapana* (Oral intake of medicated ghee) i) as *Karnaroga samanya chikitsa*¹², ii) as *Bhadiryā chikitsa* - after meals and after *Basti Karma*¹⁵, in empty stomach at night followed by *Ksheera Pana*¹⁶.

Abhyanga : It is a type of *bahya sneha*. It can be done to the entire *shiras* (*shiro abhyanga*) or to the *karna* alone (*sthanika abhyanga*) Eg. *Eranda Shigruvadi Taila*¹⁷.

SWEDANA (Sudation) : Sushruta advises two forms of *swedana*. *Nadi sweda* : with *Bilva Erandadi dravyas*¹⁸. *Pinda sweda* : either with flesh of fish, cock or lava bird added with milk¹⁹.

KARNAPOORANA (Instillation of medicated liquids into the ears)

It is also a type of *bahya sneha*. Acharya Charaka and Vagbhata advocate that *karnapoorana* should be done daily to avoid the diseases of the ear²⁰. Acharya Sushruta also has mentioned *karnapoorana* as a solution for all kinds of ear problems. *Bilva Taila*^{21,22}, *Sita, Maduka Bimbi sidda taila*²³, *Ashwatha* or *Bahupatraka Khalla Taila*²⁴, *Kantakaari* with *aja ksheera & kukkuta vasa*²⁵, *Deepika Taila*²⁶, *Sarshapa Taila* or *KatuTaila*²⁷.

*Eranda Shigruvadi Taila*¹⁷ can be used for *Nasya, Karna Abhyanga* and *Poorana, Dashamooli Taila*²⁸.

NASYA KARMA (Instillation of medicated liquids through the nasal cavity). It nourishes the organs above the clavicle, It particularly strengthens the "*Sringataka Marma*" (cavernous sinus) which is the seat of all the centers of eye, ear, nose and tongue²⁹. Acharya Vagbhata advises *Eranda Shigruvadi Taila* for *Nasya karma*¹⁷. *Nasya* acts on the *Srotas* of *Shiras* (channels of

head) and cleans them. So accumulation of vitiated kapha in the *karnavaha srotas* can be prevented by daily application of *Pratimarsha Nasya*³⁰.

Shamanoushadhi : *Dashamoola rasayana*, *Lashoona rasayana*, *Saraswatha gritha*, *Narasimha rasayana*, *Saareevadi vati* and other classical *rasayanas* are widely used for the management of *bhadiryā*..

Table No: 01. Pathya Apathya.

Pathya ³¹ (Wholesome foods)	Apathya ³² . (Un wholesomes)
<i>Godhuma</i>	<i>Danta kashta</i> (brushing the teeth with twigs)
<i>Shaali</i>	<i>Shira snaana</i> (head bath)
<i>Mudga</i>	<i>Vyayama</i> (physical exercise)
<i>Yava</i>	<i>Sleshmala</i> , <i>Guru Aahaara</i> (food which is hard to digest)
<i>Puraana Grutha</i>	<i>Kandooyana</i> (picking the ear)
<i>Mamsa of Lava, Mayoora, Harina, Tittiri & Vana Kukkuta.</i>	<i>Tushaara Sevana</i> (exposure to fog)
<i>Patola</i>	<i>Katu</i> (pungent), <i>Kashaya</i> (astringent), <i>Tikta</i> (bitter) <i>aahara</i> and <i>dravya</i> .
<i>Shigru</i>	<i>Rooksha</i> and <i>laghu gunayukta aahara</i> and <i>dravya</i>
<i>Varthaka</i>	<i>Sheetha virya dravyas</i> ,
<i>Sunishanna</i>	<i>Sushka shaakha</i> (dried leafy vegetables),
<i>Sarva Prakaara Rasayana Dravyas</i>	<i>Mudga</i> (green gram)
<i>Brahmahcharya paalana</i>	<i>Masoora</i>
<i>Abhashana</i>	<i>Adhaki</i>
	<i>Kalaya</i>
	<i>Anashana, vishamashana, adhyashana</i>
	<i>Vata, mootra, pureesha, shukra, chardi, kshawathu vega dharana</i> ³³ .

DISCUSSION

Vata is the dominant in *vriddhavastha*. Its *Vridi* (increase) causes *shoshana* (drying up) of *prasada bhaga* of *rasa dhatu* (nourishing part). This leads to *rasa dhatu kshaya* (tissue level depletion), *kshaya* of the successive *dhatu*s and *Ojas* (natural immune mechanism). Once *Ojo kshaya* occurs, aging process accelerates. Impaired *rasadhatvagni* also causes *rasa kshaya*. *Rasa kshaya* results in *shabda asahishnuta* (Intolerance to sound) which we can compare to speech

discrimination in Presbycusis. *Prakupita vata*, because of its *shoshana* property, causes *Kapha kshaya*. Hence functions of kapha such as providing *sneha* (unctuousness), *mardavata*, *sthiratva guruthva* (stability), and *bala* (strength) of the *sravanendriyas* are affected. This causes impaired functioning of *sravanendriya* which progresses with age. The treatment procedures which are said for *Bhadiryā* such as *Gritapana*, *Abhyanga*,

Karnapoorana, *Nasya karma* are done by *sneha dravyas*. *Ghrita* is *madhura* in *rasa*, with *sowmya* and *mrudu gunas*, *sheetha virya*, and causes *snehana*, acts as *vata pitta shamaka* and *agnideepaka*. But its excessive intake causes *kaphavriddi* which is not acceptable. So it is advisable to take *gritha* in that quantity which pacifies *vata* and does not cause *kapha vriddi*. *Karnapoorana* and *Pratimarsha nasya* were explained as *dinacharya* procedures to prevent *Vataja Karnaroga*. Most of the *tailas* which are indicated in *bhadiryā chikitsa* contains *vata kaphahara dravyas* as ingredients. *Tila taila* is usually used as base for the preparation of medicated oils. It is *agneya* in nature. Because of *teekshna*, *sookshma*, *vishada*, *vikasi gunas*, it helps the deeper penetration, fast action and better bioavailability of active principles. Its *ushna* and *guru gunas*, *madhura rasa*, *madhura vipaka* pacify *vata*, It also has *brhmana*, *preenana* and *karnashoola prashamana* actions. By virtue of these properties, the classical *dravyas* indicated for *bhadiryā* mitigates *prakupita vata* and brings it back to normalcy.

The following concepts of treatments may be followed in the management of *Vrdhakyajanya Bhadiryā*.

In *Vataja Bhadiryā – Vatahara, Balya, Brhmana, Vaatanulomana Chikitsa, Rasayana Chikitsa, Snigda & Ushna guna dravyas* are useful. In *Kaphaja Bhadiryā – Kaphahara Chikitsa* like *Vamana, Teekshna Nasya, Teekshana Dhoopana* is preferable. In *Vata-Kaphaja – Combination of the above (Yukti poorvaka)*. *Vata Vyadhivāt, Pratishyayavat Chikitsa* is also useful as the

main doshas involved in the causation of *Pratishyaya* are *Vata and Kapha*.

CONCLUSION

In degenerative diseases, *Vata* should be considered as an important factor and needs to be addressed first. Normalising the functions of *vata, kapha, rasa dhatu, dhathvagni* and *ojas* by adopting *rasayana* and other methods of treatments mentioned in Ayurvedic classics are helpful in delaying the aging process and prolonging the normal functioning of *shravanendriya*. As prophylactic measure, to inhibit the progressive degenerative changes in the middle and inner ear, periodical *snaihika shodhana* with *santarpana chikitsa* along with *rasayanas* are beneficial. As the age advances, to mitigate *vata* and *vataja nanathmaja vyadhis*, we can adopt *vata shamaka moordhni taila prayoga. Shamanoushadhis* which process *tridoshashamana* action can be given for *rasayana* purpose which will maintain the physiology of existing hearing. In *Vardhakyavastha, pathya ahara* and *viharas* should be taken into consideration in such a way that it nourishes *saptha dhatus* and *ojus* which will contribute to the immune system. Though many classical *yogas* and therapeutic measures are indicated, the selection of the treatment and *oushadhis* should be done based on the *pradhanyata, avastha* of *doshas* and *sadhyasadyatha*.

REFERENCES

1. Moscicki EK, Elkins EF, Baum HM, Mcnamara PM: Hearing Loss in The Elderly: An Epidemiologic Study of The Framingham Heart Study Co-hort *Ear & Hearing* Vol 6(4), 184-90; 1985..

2. Cruickshanks K, Klein R, Klein B, Wiley T, Nondahl D, Tweed T, Mares-Perlman JA, Nondahl DM: Prevalence of Hearing Loss In Older Adults in Beaver Dam, Wisconsin: The Epidemiology of Hearing Loss Study. *American Journal of Epidemiology* Vol 148(9), 879-86; 1998.
3. Reuben DBHL Hearing Loss in Community-Dwelling Older Persons: National Prevalence Data and Identification Using Simple Question. *Journal of the American Geriatrics Society* Vol 46(8), 1008-1011; 1998..
4. World Health Organization. State of hearing and ear care in the South East Asia Region. WHO Regional Office for South East Asia. WHO-SEARO. SEA/DEAF/9.)
5. Tae Su Kim, Jong Woo Chung : Evaluation of Age-Related Hearing Loss : Korean Journal of Audiology. Published online 2013 Sep 24. doi: 10.7874/kja.2013.17.2.50
6. WHO Regional Office for South-East Asia Multicentre Study on the Magnitude and Etiology of Hearing Impairment. Report of a Meeting of Principal Investigators, Colombo, Sri Lanka, 3-5 September 1997.
7. Vagbhata. Ashtanga Hridayam elaborated by Arunadatta and Hemadri with Savangasundara and Ayurvedarasayana commentaries, Chaukhambha Orientalia, Varanasi; India. Reprint Ninth Edition : 2005. UttaraSthana. Chapter 17, Shloka No. 10, Page No 835.
8. Agnivesha. Charaka Samhita, elaborated by Charaka and Drdhabala with Ayurveda Dipika Commentary of Chakrapanidatta, Chaukhambha Orientalia, Varanasi; India. Reprint : 2009. Sutra sthana. Chapter 20, Shloka No.11, Page No 113.
9. Yogarathnakara. Vaidyaprabha Hindi Commentary, Chowkhambha Krishnadas Academy, Varanasi; India. Reprint : 2011. Karnarogadhikara, Karnaroganam Nidana Chikitsa, Shloka No 1,2. Page No 727.
10. Sushruta. Sushruta Samhita, elaborated by Dalhana with Nibanda Sangraha Commentary of Dalhanacharya, Chaukhambha Orientalia, Varanasi; India. Reprint : 2009. Uttara Tantra , Chapter 20, Shloka No 8, Page.No 643,644.
11. Vagbhata. Ashtanga Hridayam elaborated by Arunadatta and Hemadri with Savangasundara and Ayurvedarasayana commentaries, Chaukhambha Orientalia, Varanasi; India. Reprint Ninth Edition : 2005. UttaraSthana. Chapter 17, Shloka No.10, Page No 835.
12. Sushruta. Sushruta Samhita, elaborated by Dalhana with Nibanda Sangraha Commentary of Dalhanacharya, Chaukhambha Orientalia, Varanasi; India. Reprint : 2009. Uttara Tantra , Chapter 21, Shloka No 3, Page No 645 .
13. Vagbhata. Ashtanga Samgraha Text, English translation by Prof K.R.Srikantha Murthy, Chaukhambha Orientalia, Varanasi; India. First Edition :1997.Uttara Sthana, Chapter 22, Shloka No 27, Page No 190.
14. Vagbhata. Ashtanga Samgraha.Text, English translation by Prof K.R.Srikantha Murthy, Chaukhambha Orientalia, Varanasi; India. First Edition :1997.Uttara Sthana, Chapter 22, Shloka No 26, Page No 190.
15. Sushruta. Sushruta Samhita, elaborated by Dalhana with Nibanda Sangraha Commentary of Dalhanacharya, Chaukhambha Orientalia, Varanasi; India.

Reprint : 2009. Uttara Tantra , Chapter 21, Shloka No11, Page.No 645.

16. Sushruta. Sushruta Samhita, elaborated by Dalhana with Nibanda Sangraha Commentary of Dalhanacharya, Chaukhambha Orientalia, Varanasi; India. Reprint : 2009. Uttara Tantra , Chapter 21, Shloka No12, Page.No 645.

17. Vagbhata. Ashtanga Hridayam elaborated by Arunadatta and Hemadri with Savangasundara and Ayurvedarasayana commentaries, Chaukhambha Orientalia, Varanasi; India. Reprint Ninth Edition : 2005. UttaraSthana. Chapter 18, Shloka No.23, 24, Page No 838.

18. Sushruta. Sushruta Samhita, elaborated by Dalhana with Nibanda Sangraha Commentary of Dalhanacharya, Chaukhambha Orientalia, Varanasi; India. Reprint : 2009. Uttara Tantra , Chapter 21, Shloka No 6,7, Page.No 645.

19. Sushruta. Sushruta Samhita, elaborated by Dalhana with Nibanda Sangraha Commentary of Dalhanacharya, Chaukhambha Orientalia, Varanasi; India. Reprint : 2009. Uttara Tantra , Chapter 21, Shloka No 8, Page No 645.

20. Agnivesha. Charaka Samhita, elaborated by Charaka and Drdhabala with Ayurveda Dipika Commentary of Chakrapanidatta, Chaukhambha Orientalia, Varanasi; India. Reprint : 2009. Sutra sthana. Chapter 5, Shloka No.84, Page No 42.

21. Sushruta. Sushruta Samhita, elaborated by Dalhana with Nibanda Sangraha Commentary of Dalhanacharya, Chaukhambha Orientalia, Varanasi; India. Reprint : 2009. Uttara Tantra , Chapter 21, Shloka No 35, Page No 646.

22. Yogarathnakara. Vaidyaprabha Hindi Commentary, Chowkhambha Krishnadas Academy,Varanasi; India.Reprint : 2011. Karnarogadhikara, Karnaroganam Chikitsa, Shloka No 44. Page No 732.

23. Sushruta. Sushruta Samhita, elaborated by Dalhana with Nibanda Sangraha Commentary of Dalhanacharya, Chaukhambha Orientalia, Varanasi; India. Reprint : 2009. Uttara Tantra , Chapter 21, Shloka No 36, Page No 646.

24. Sushruta. Sushruta Samhita, elaborated by Dalhana with Nibanda Sangraha Commentary of Dalhanacharya, Chaukhambha Orientalia, Varanasi; India. Reprint : 2009. Uttara Tantra , Chapter 21, Shloka No 9, 10, Page No 645.

25. Sushruta. Sushruta Samhita, elaborated by Dalhana with Nibanda Sangraha Commentary of Dalhanacharya, Chaukhambha Orientalia, Varanasi; India. Reprint : 2009. Uttara Tantra , Chapter 21, Shloka No 13, Page No 645.

26. Sushruta. Sushruta Samhita, elaborated by Dalhana with Nibanda Sangraha Commentary of Dalhanacharya, Chaukhambha Orientalia, Varanasi; India. Reprint : 2009. Uttara Tantra , Chapter 21, Shloka No 20,21,22, Page No 646.

27. Sushruta. Sushruta Samhita, elaborated by Dalhana with Nibanda Sangraha Commentary of Dalhanacharya, Chaukhambha Orientalia, Varanasi; India. Reprint: 2009. Uttara tantra, Chapter 21, Shloka No 54, Page No 647.

28. Cakradatta. Cakradatta, Text with English Translation by Priya Vrat Sharma. Third edition. Chaukhambha Publishers, Varanasi; India: 2002. Chapter 57, Shloka No.28, Page No 472.

29. Sushruta Sushruta Samhita, elaborated by Dalhana with Nibanda Sangraha Commentary of Dalhanacharya, Chaukhambha Orientalia, Varanasi; India. Reprint : 2009. Sharirasthana, Chapter 6, Shloka No 27, Page No 374.

30. Agnivesha. Charaka Samhita, elaborated by Charaka and Drdhabala with Ayurveda Dipika Commentary of Chakrapanidatta, Chaukhambha Orientalia, Varanasi; India. Reprint : 2009. Sutra sthana. Chapter 5, Shloka No.58, Page No 41.

31. Yogarathnakara. Vaidyaprabha Hindi Commentary, Chowkhambha Krishnadas Academy, Varanasi; India. Reprint : 2011. Karnarogadhikara, Karnapali vikaaranam Chikitsa, Shloka No 86, 87, 88. Page No 736.

32. Yogarathnakara. Vaidyaprabha Hindi Commentary, Chowkhambha Krishnadas Academy, Varanasi; India. Reprint : 2011. Karnarogadhikara, Karnapalivikaranam Chikitsa, Shloka No 89. Page No 736.

33. Sushruta. Sushruta Samhita, elaborated by Dalhana with Nibanda Sangraha Commentary of Dalhanacharya, Chaukhambha Orientalia, Varanasi; India. Reprint : 2009. Sutrasthana , Chapter 21, Shloka No 19, Page No 103.

CORRESPONDING AUTHOR

Dr Vivek G K,

Assistant Professor, Department of Shalaky
Tantra, J S S Ayurveda Medical College,
Mysuru, Kanataka, India

E-mail: vivekgkv58@gmail.com

Source of support: Nil,

Conflict of interest: None Declared

Cite this article as

Dr Vivek G K: A Critical Analysis of
Presbycusis or Age-Related Hearing Loss
(Ahl) With Respect To Vardhyakyajanya
Bhadiry – An Ayurveda Perspective
ayurpub;III(5): 1075-1082