

Pilot Study of Effect of Kapikacchu Ghanavati in Senile Hearing Loss

Gajanan B. Patil¹, R. G. Dole² and P. P. Diwan³

^{1, 2, 3} Bharati Vidyapeeth College of Ayurved, Pune
Maharashtra, India

Abstract: Senile hearing loss occurs at mid to late adult age .It onset bilateral or unilateral progressive sensori neural hearing loss. In the world more than 250 millions peoples suffering from senile hearing loss and it is second most leading cause of years lived disabilities. But there is no assured treatment for senile hearing loss. According to Ayurveda Badhirya (hearing loss) is mainly related with Vata dosha which is predominant in old age .So, as the age increases, Badhirya also increases.kapikacchu (Mucuna pruriens bek) seeds are Ayurvedic medicine, Acharya Bhavprakash has mentioned properties of Kpikacchhu. Its Vatghna, Balya and Vajikar properties. In Badhirya mainly vitiated vata dosha alone or along with Kapha goes in Shabdavaha sira / strotas.Because of that margavrodh occurs and leads to Badhirya. So with help of vataghmata the balya property of kapikacchu it is useful in treatment of Badhirya .

In this pilot study an attempt has been made to highlight the view of ancient and modern science concerning with conceptual understanding of its etiology, diagnosis of senile hearing loss (age related sensory neural hearing loss) and its Ayurvedic treatment. The present study has shown that the kapikacchu ghana vati is highly valuable in the management of senile hearing loss.

Keywords: Ayurveda, Karna, Badhirya, senile, Vatghna, kapikacchu.

Introduction:

In the world more than 250 million peoples are suffering from senile hearing loss. Hearing impairment is the most frequent sensory deficit in human populations. Due to hearing impairment there is inability to interpret speech sounds, often producing a reduced ability to communicate, delay in language acquisition, economic and educational disadvantage, social isolation and stigmatisation (Colin Mathers, Andrew Smith, and Marisol Concha 2000). Senile hearing loss is defined as mid to late adult age.It onsets bilateral or unilateral progressive sensori neural hearing loss. It has serious negative impact on social life and often leads to progressive isolation. Factors involving inner ear are differentiated by Dr. Suhuknecht & colleagues.

(1) Sensory – loss of hair cells (& of sustentacular cells) at basal end of organ of corti

(2)Neural – Due to the cochlear ganglionic cell loss the degeneration of neurons of cochlear Nerve occurs

(Suhuknecht H. presbycusis, laryngoscope 1995.)

Senile hearing loss is associated with an audiogram that represents greatest hearing loss at higher frequencies in majority of the cases. The pure tone hearing threshold increases with growing age especially in the higher frequency. A senile hearing loss patient suffers from high tone hearing loss first, which leads to effect on communication, particularly in noisy area. Later, the ability to

detect, identify, and to localize the sounds get impacted. If the loss progress to the 2–4 kHz range, which is significant in understanding the voiceless consonants (t, p, k, f, s, and ch), even vowel identification, speech understanding in any situation are affected. Old age people frequently complaints about - I can hear you, but I can't understand you.“ For example, people get confused of words like, Sunday with someday, mash- math etc. Even such minor misperceptions can lead to communication errors.

According to WHO health Report 2001-02, adult-onset hearing loss was the 2nd leading cause with of (Years lived disability) YLDs at global level accounting for 4.6% of total global YLDs. According to Ayurveda Badhirya (hearing loss) is mainly related with Vata dosha which is predominant in old age .So as the age increases, Badhirya also increases. In Badhirya mainly vitiated vata dosha alone or along with Kapha goes in Shabdavaha sira / strotas because of that margavrodh occurs and which leads to Badhirya. (Ravidatta Tripathi Ashthangsangraha Sutrashana Adhya 23/21 page 430) In Ayurveda, senile hearing loss is called vardhakyajanya Badhirya.

Aims and objectives of the present Study

To study in detail about Kpikacchhu Ghana Vati.

To study in detail about senile hearing loss.

Understanding the effect of Kpikacchhu Ghana Vati in senile hearing loss.

To come forward with effective Ayurvedic management of senile hearing loss.

Material & Methods

Patient selection

Patient attending the OPD and IPD of Department of Shalaky tantra, B.V.D.U.C.O.A., Hospital, with signs and symptoms of Badhira (Senile hearing loss) were registered irrespective of their sex, occupation, religion, education etc. A total of 20 patients were registered for the study. Performa was prepared for elaboration of all aspects of the disease on Ayurvedic and modern aspect. Written consent was taken from all the patients registered for the trial.

Sampling technique

A total of 30 registered patients were divided into two groups. In **Trial Group**-fifteen patients were treated with Kpikacchhu Ghana vati orally with anupaan Godugdha. In **Control Group**- Only Audiometry done of fifteen patients and no treatment given to this group of patients.

Inclusion criteria:

Individuals of 40 and above of age will be included.

Individuals having complaints of Sensorineural Deafness

Individuals of both the sex will be included.

Exclusion Criteria:

Individuals below 40 years

Individuals of SN loss due to traumatic head injury.

Individuals of conductive hearing loss due to perforation of tympanic membrane.

Investigations Audiometry Drug review

KAIKACCHU-(Mucuna pruriens bek)

Botanical Source: Dry Seed of Cowhage(Kpikacchhu) Pharmaceutical Latin: Mucuna pruriens bek

Family: Leguminosae (fabaceae)

Genus: S. Mucuna

Species: M. pruriens

Synonyms: Hindi-. Kauch, Kewach, Khujani

Marathi- Kaucha, Kawach English- cowhage, cowitch **Ayurvedic properties** Rasa : Madhura , Tikta Guna : Guru, Snigdha Virya : Ushna

Vipaka: Madhura

Doshakarma: Vataghana, Kapha-pittavardhak

Prayojjang: Bija moola

Doshprayog : Used in Vataj-vikara

Properties: Acharya Bhavprakash has mentioned properties of Kpikacchu - It is Vatghna, Balya and Vajikar which promotes balya for nadi sansthan helps in regeneration of nerves.

Cemical constituents:

Seed contains moistures, protein, extra fiber, minerals, calcium, iron, etc.

Shwet- Kapikacachhu is selected for drug preparation 'Kpikacachhu Ghanavati' formed as per Granthokta

method.

Preparation of Kpikacachhu Ghan Vati:



INTERVENTION:

Sample size: 15 patients in each group

Drug : Kpikacchhu Ghana Vati

Dose : 1 to 2 gram two times in day. 2 vati two times in day. Where; 1 vati = 500mg

Methods: Oral administration

Anupana: Godugdha

Total period of study: 60 days

Assesment criteria:

Objective parameters: Audiometry 0th, 30th, 60th day only Rinne's Test score, Weber's Test score, Absolute Bone Conduction Test score are obtained.

Subjective parameters: Hearing in noisy area, Difficulty in hearing, whispering sound, Tinnitus Karnanad] Vertigo [Bhram]

Observation period: screened on day 0- for study of fulfilling inclusion criteria will be randomized into either group and test will be performed, follow up on 15th, 30th, 45th, 60th day to assess the progress. From day 1 drug will be started. Total study duration including follow up: 60 days.

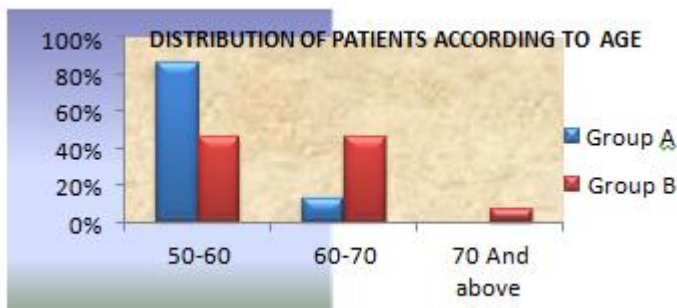
Gradation chart:-

Normal	0
Mild	+
Moderate	++
Severe	+++

1. Statistical analysis and observations

Age wise distribution

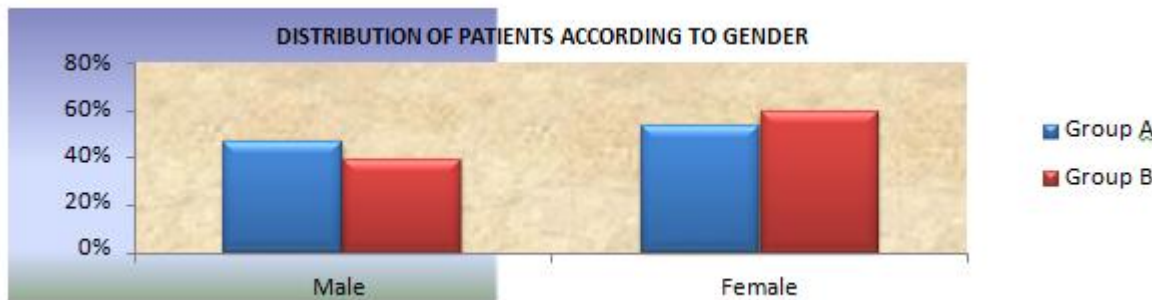
Age	Group A		Group B	
	Of Patients	percentage	o. Of Patients	ercentage
50-60	13	86.67%	7	46.67%
60-70	2	13.33%	7	46.67%
And above	0	0.00%	1	6.67%
and Total	15	100%	15	100%



In group A there was maximum no. of patients . i.e 86 % in age group 50-60years. Similarly, in Group B it was found that maximum i.e.46.67% in age group 50-60 as well as 60-70 .

2. Gender wise distribution

Gender	Group A		Group B	
	No. Of Patients	Percentage	No. Of	Percentage
Male	7	46.67%	6	40.00%
Female	8	53.33%	9	60.00%
Grand Total	15	100%	15	100%



It was found that there was Maximum no. of patients i.e.53.33% and 60 % in Group A and Group B respectively. This indicated its more incidence rate in female. The obtained information was analyzed statistically by - Friedman test and for comparison Mann whitney u test was carried out.

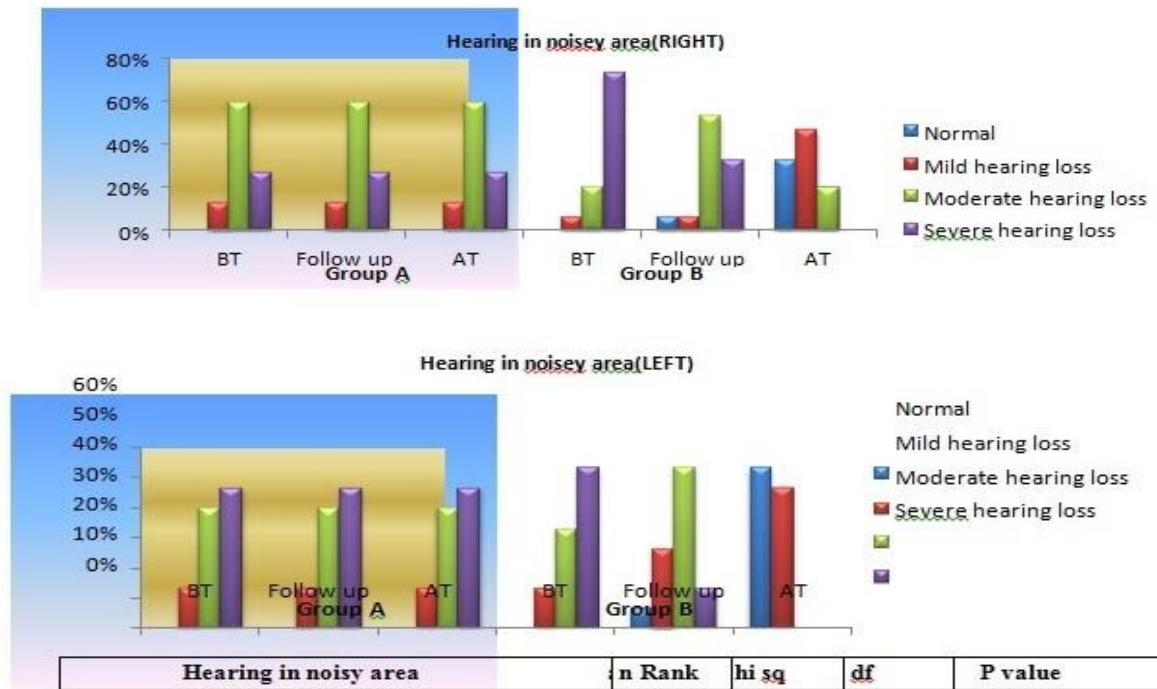
Effect of Group A and Group B on Audiometry

I.e. Result of this analysis indicates there were highly significant improvement observed in Group B on Audiometry in sensori-neural deafness. However, there was a significant difference in follow up and post treatment in sensori-neural deafness, for improvement observed in Group A.

Comparison of Group A and Group B on Audiometry in sensori-neural deafness.

There, was statistically significant difference in improvement on Audiometry found in sensori neural deafness. i.e. effect of Group A was not same as effect of Group B on Audiometry in sensori-neural deafness.

Effect of Group A and Group B on Hearing in noisy area



I.e. Results of this analysis indicated that there, were highly significant in improvement observed in Group B on Hearing in noisy area in sensori-neural deafness. However, there was significant difference in follow up and post treatment in in sensori-neural deafness, for improvement observed in Group A.

There, was statistically significant difference in improvement on Hearing in noisy area found in sensori-neural deafness. i.e. effect of Group A was not same as effect of Group B on Audiometry in sensori-neural deafness.

Effect of Group A and Group B on Hearing of whispering sound





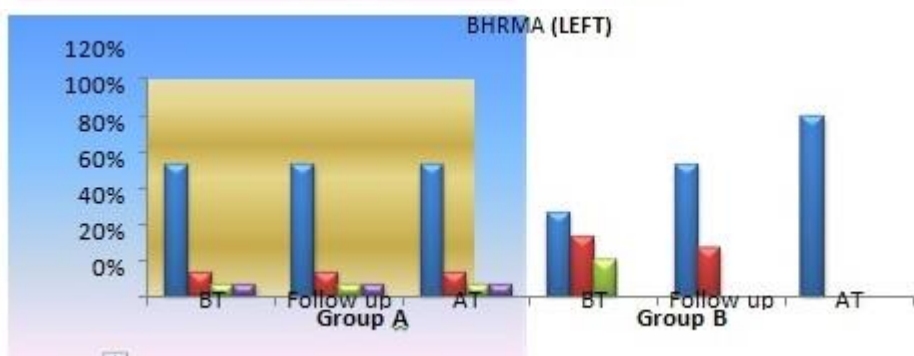
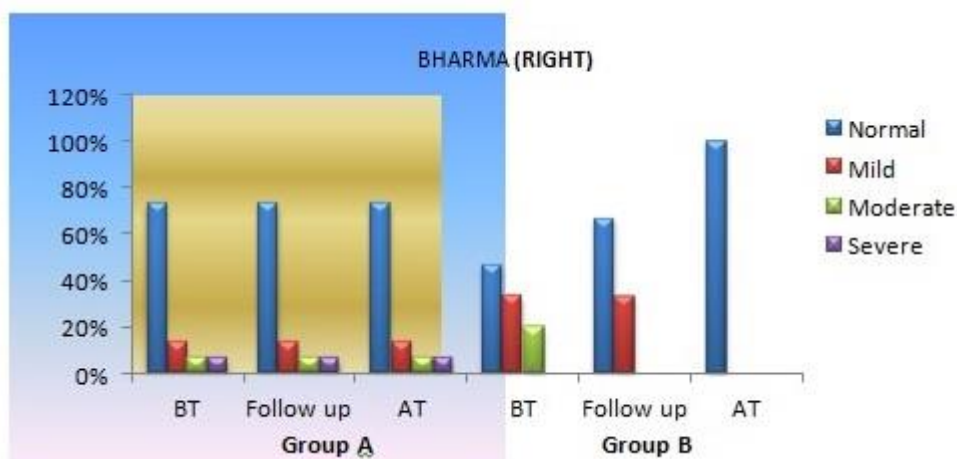
I.e. Result of this analysis indicates that there, were highly significant improvement observed in Group B on Hearing of whispering sound in sensori-neural deafness.

However , there was significant difference in follow up and post treatment in sensori-neural deafness, for improvement observed in Group A .

Comparison of Group A and Group B on Hearing of whispering sound in sensori-neural deafness.

There, was statistically significant difference in the improvement on Hearing of whispering sound found in sensori-neural deafness. i.e. effect of Group A was not same as effect of Group B on Hearing of whispering sound in sensori-neural deafness.

Effect of Group A and Group B on bharma



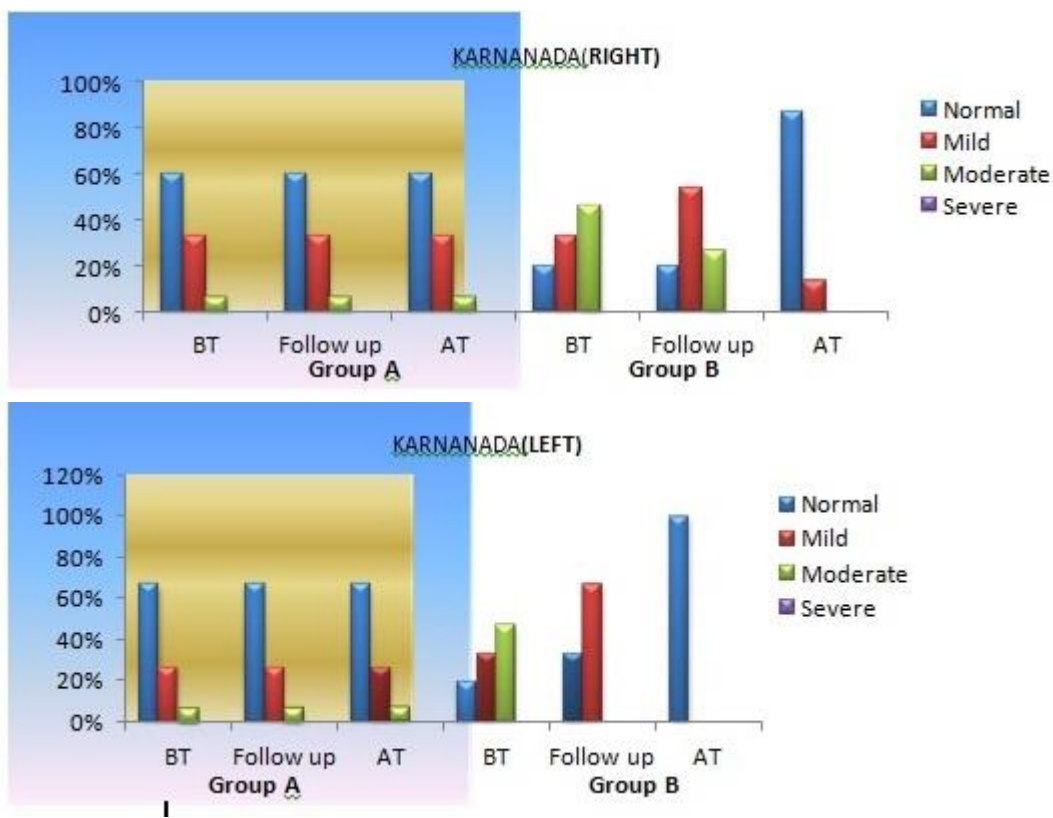
I.e. Results of this analysis indicates - there were highly significant in improvement observed in Group B on bharma in sensori-neural deafness.

However there was significant difference in follow up and post treatment in sensori-neural deafness, for improvement observed in Group A .

Comparison of Group A and Group B on BHARMA in sensori-neural deafness.

There, was statistically significant difference in improvement on bharma found in sensori-neural deafness. i.e. effect of Group A was not same as effect of Group B on bharma in sensori-neural deafness.

Effect of Group A and Group B on karnanada



I.e. Result of this analysis indicates that- there were highly significant in improvement observed in Group B on karnanada in sensori-neural deafness.

However, there was significant difference in follow up and post treatment in sensori-neural deafness, for improvement observed in Group A .

Comparison of Group A and Group B on karnanada in sensori-neural deafness.

In right side karnanada it was found that there was not statistically significant difference in improvement of sensori-neural deafness. i.e; effect of Group A was same as effect of Group B on karnanada (right) in sensori-neural deafness. But In left side karnanada it was found that there was not statistically significant difference in improvement of sensori-neural deafness. i.e; effect of Group A was same as effect of Group B on karnanada(left) in sensori-neural deafness.

Discussion:

In this pilot study regarding the age wise distribution of patient of age related sensory neural deafness. In both groups it is more in age group 50 to 70 years. It means that age related sensory neural deafness is more common in this age group. As per sex wise distribution of patients of age related sensory neural deafness in both groups females are more than male. Regarding the objective and subjective parameters in Audiometry results is highly significant in trial group compare to control group also in trail group results are significantly improving after third or fourth follow-up. Which means there is significant result after treatment. In the symptom hearing in noisy area there, was statistically

significant difference in improvement on Hearing in noisy area in trail group than control group. In trail group there is significant improvement after second and third follow-up it means there is significant results after treatment. In the symptom Hearing of whispering sound there, was statistically significant difference in improvement on Hearing of whispering sound in trail group than control group. In trail group there is significant improvement after second and third follow-up it means there is significant results after treatment. In the symptom bhrama (vertigo) there, was statistically significant difference in improvement on bhram in trail group than control group. In trail group there is significant improvement after second and third follow-up it means there is significant results after treatment. In the symptom Karnanada (tinnitus) there, was statistically significant difference in improvement on Karnanada in trail group than control group. In trail group there is significant improvement after second and third follow-up it means there is significant results after treatment.

Conclusion:

Age related hearing loss is commonly found after 50years of age. Both male and female sufferer but females are more in number. In control group there is no treatment given to the patients, only Audiometry done but there is no significant changes in sixty days it means Audiometry is confirmatory test for hearing loss. In this study Hearing loss is common in all patients but associated symptoms like difficulty of hearing in noisy area, difficulty in hearing of whispering sound, bhrama, karnanada is not found in each and

every patient it means senile deafness is only hearing loss or hearing loss with one or more associated symptoms. Comparison between trial and control group there is no significant changes in control group but in trial group there is results are encouraging after treatment of Kapikacchu ghan vati. Associated symptoms like hearing difficulty in noisy area and difficulty in hearing of whispering sound improves significantly. Bhrama

and karnanada also improves significantly after treatment of Kapikacchhu Ghana vati. Nowadays there is no assured and permanent treatment for senile hearing loss. As per this study there is full scope for further research study of treatment of senile hearing loss. Also in Brahma (vertigo) and in karnanada (tinnitus) individually we will use Kapikacchhu Ghana vati and can do further study.

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