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Department of Health Research
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Standard Treatment Workflow (STW) for the

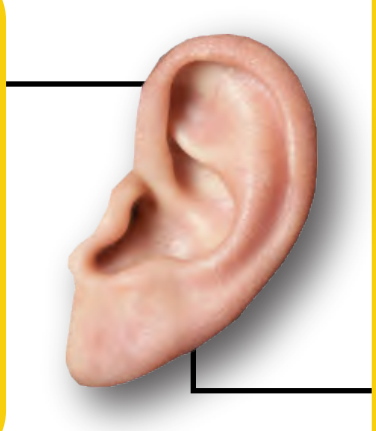
Management of HEARING IMPAIRMENT IN PEDIATRIC AGE GROUP (0 - 12 YEARS)

ICD 10 H90.5

Disabling hearing impairment (31 or more dB HL in better ear) may affect language development and learning outcomes and hence needs urgent intervention

WHEN TO SUSPECT IN CHILDREN

1. Parental concern about delayed speech, language, and developmental delay (refer to red flags)
2. Family history of Hearing Loss (HL).
3. Exposure to ototoxic drugs/ hyperbilirubinemia requiring exchange transfusion/ Neonatal ICU stay for > 3days.
4. In-utero infections (CMV/ rubella/ syphilis/ herpes/ toxoplasmosis)
5. Syndromes (NF) Or neurodegenerative disorders (Hunter syndrome, FA) associated with HL.
6. Post-natal infection known to cause HL (Meningitis)
7. Head Trauma
8. Recurrent/ persistent (>/=3 months) middle ear disease
9. Chemo/ Radiotherapy to head and neck



UNIVERSAL HEARING SCREENING FOR CONGENITAL DEAFNESS

- Community based hearing screening:
  - i. May be co-ordinated with immunization schedule
  - ii. By primary health care workers.
  - iii. Using calibrated noisemakers/ toys
- All children who fail preliminary screen to undergo detailed evaluation at health care facility.

EVALUATION

ESSENTIAL

1. Clinical examination to look for ear canal deformities, tympanic membrane and middle ear status by otoscopy/ otoendoscopy.
2. Age appropriate audiological/ behavioral observation tests in a soundproof room by audiologist/ ENT specialist.
3. Tympanic membrane mobility test/ tympanometry.

COMMON CAUSES OF HL

1. Impacted wax
2. Middle ear fluid assciated with adenoid hypertrophy/ cold climate
3. Tympanic membrane perforation
4. Sensorineural Hearing loss (SNHL) due to various causes as indicated earlier

RED FLAGS POINTING FOR URGENT HEARING EVALUATION

- 6months- no head turning to the side of calling
- 1yr- no babbling/ speech like sound production
- 1.5yrs- not saying mama/papa/dada or other names
- 2yrs-not pointing to pictures/ body parts when named or speaking less than 10 words
- 3 yrs- does not understand action words or not asking for things by names or not speaking small sentences.
- At any age- has regressed or lost previously acquired speech/ language milestones

MANAGEMENT

GUIDING PRINCIPLES

CONDUCTIVE HL

- Wax removal under direct vision by ENT specialist relieves hearing impairement
- Appropriate surgery is to be planned for tympanic membrane perforation
- Middle ear fluid (OME) may be associated with adenotonsillar disease which needs to be treated. Initially medical treatment and surgery to be considered for OME persisting for more than 3months/ earlier in the presence of speech and language delay
- For non-surgical condidates/ delayed surgical management, amplification by hearing aid to be reinforced in bilateral CHL.

SNHL

- Appropriate amplification, preferential seating in classroom
- Periodic evaluation for hearing aid users for mould fitting and amplification settings
- Screening for developmental delay by pediatrician/ psychologist

DIVISION OF RESPONSIBILITIES

PHC LEVEL

- Suspect HL
- Initial evaluation
- Referral if initial evaluation is suggestive of HL
- Follow up of rehabilitated/ treated patients with HL
- Prevention of HL

DH LEVEL

1. Audiometric evaluation by Audiologist/ Otolaryngologist
2. Hearing aid dispensing (mould fitting and HA programming)
3. Rehabilitation by speech therapist
4. Appropriate surgery for CHL
5. Training programme for parents of hearing impaired children to enhance pre-school language development

TERTIARY LEVEL

- Surgical intervention options : Cochlear implant / BAHA (as per ADIP guidelines)
- Interdisciplinary team based interventions in children with multiple disabilities.

QUALITY ASSESSMENT PARAMETERS

- Short term: Quality of amplification using electroacoustic objective measures and culturally appropriate subjective questionnaire tools
- Long term (Desirable) : Use CBR matrix based measurement for ensuring holistic rehabilitation

FOLLOW UP SERVICES

1. Home visits by Health Worker/ASHA to ensure utilization of assistive devices and support parents to enhance language development.
2. School visits to educate teachers and normally hearing children to include their peers with hearing disability in the school environment
3. Home/ school visit by social worker for evaluation of social/ educational/ livelihood/ justice and empowerment domains of the child

☛ KEEP A HIGH THRESHOLD FOR INVASIVE PROCEDURES

ABBREVIATIONS

ADIP : Assistance to disabled persons for purchase/ fitting of aids and appliances
BAHA : Bone Anchored Hearing Aid
CBR : Community Based Rehabilitation
CMV : Cyto Megalo Virus
FA : Friedreich Ataxia
NF : NeuroFibromatosis
OME : Otitis Media with Effusion

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- *ADIP Guidelines : http://disabilityaffairs.gov.in/content/page/adip-scheme.php*