Meniere's Disease Clinical Practice Guideline

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Disclosures

None to report

Learner Objectives

- After this presentation you should:
  - 1) discern Meniere's Disease (MD) from other forms of dizziness
  - 2) confidently formulate an evaluation/ treatment plan based on best evidence
  - 3) avoid unnecessary diagnostic studies and unhelpful forms of treatment

CPG for Meniere's Disease

- Published by AAO-HNS in April 2020
- Intended for variety of health care providers, not just otolaryngology
- Consists of key action statements (KAS)
  - Strong recommendation
  - Recommendation (for or against)
  - Option
- Due to be reviewed/updated in 2025

Key Action Statement 1

- Recommendation:
  - Clinicians should diagnose MD when certain criteria are met
  - Fairly self-evident
  - Two definitions of MD:
    - Definite
    - Probable

Definitions

- Definite MD:
  - Two or more spontaneous attacks of vertigo each lasting 20 minutes-12 hours
  - Audiometrically documented fluctuating low/mid frequency SNHL in affected ear before, during or after at least one of the episodes of vertigo
  - Fluctuating aural symptoms in affected ear
    - Hearing loss
    - Tinnitus
    - Fullness
  - Other causes excluded

Definitions

- Probable MD:
  - Two or more episodes of vertigo or dizziness each lasting 20 minutes-24 hours
  - Fluctuating aural symptoms in affected ear
    - Hearing loss
    - Tinnitus
    - Fullness
  - Other causes excluded

Caveats

- Stress that diagnosis is usually not made at one point in time
- On initial presentation may mimic sudden SNHL, viral labyrinthitis, vestibular neuritis, etc.
  - In general, cochlear symptoms precede vestibular symptoms
    - Time delay between the two may be months to a year or longer
- Explain to patient goal is symptom control, not cure
- Treatment efficacy may be very difficult to determine due to fluctuating symptoms and spontaneous remissions
- Possible to develop MD in opposite ear at some point
  - Incidence in literature varies widely (10-80%)
  - However, rare to develop in both ears simultaneously
    - Think autoimmune inner ear disease in this situation

Key Action Statement 2

- Recommendation:
  - Clinicians should determine if patient meets criteria for vestibular migraine
    - Symptoms can closely mimic/overlap MD
    - Hearing loss often described as more difficulty processing sound rather than hearing it
      - Loss mild/absent and stable over time
      - Phonophobia rather than recruitment
    - Auditory complaints often bilateral
    - Vestibular symptoms may be short (<15 minutes) or prolonged (>24 hours)
    - Vertigo, but motion intolerance/spatial disorientation a major component

Vestibular Migraine

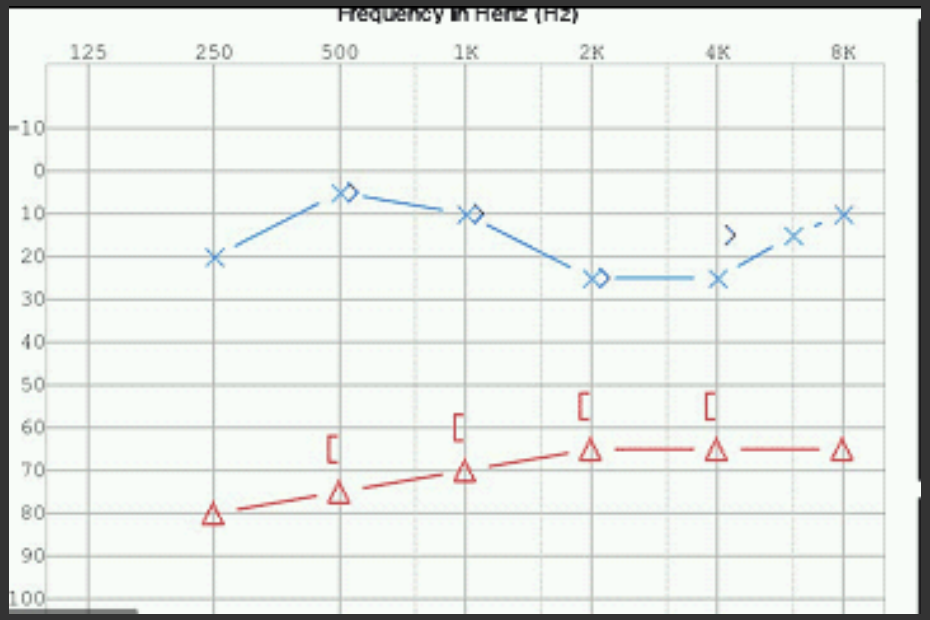
- Diagnostic criteria:
  - At least 5 attacks with vestibular symptoms:
    - Can be spontaneous, positional, head-motion induced or visually-induced
    - Can be internal or external vertigo
    - Can be just disturbed spatial orientation
    - Lasting 5 minutes to 72 hours
  - Current or previous history of migraine
  - One or more of following with 50% of vestibular episodes:
    - Headache with at least 2 of following:
      - 1. unilateral location
      - 2. pulsating quality
      - 3. moderate/severe pain intensity
      - 4. aggravation by routine physical activity
    - Photophobia and phonophobia
    - Visual aura

Key Action Statement 3

- Strong recommendation:
  - Clinician should obtain an audiogram when assessing for diagnosis of MD
    - Necessary to differentiate definite vs. probable MD
    - Low/mid frequencies refers to ≤2000 Hz

Audiogram


AC: Circum-aural, BC: B71 [Insert Earphones]
125
250
500
1k
2k
4k
8k
-10
0
10
20
30
40
50
60
70
80
90
100
Hearing level (dB)
Calibrated: 5/30/2012 10:03:03 AM S/N: 312731

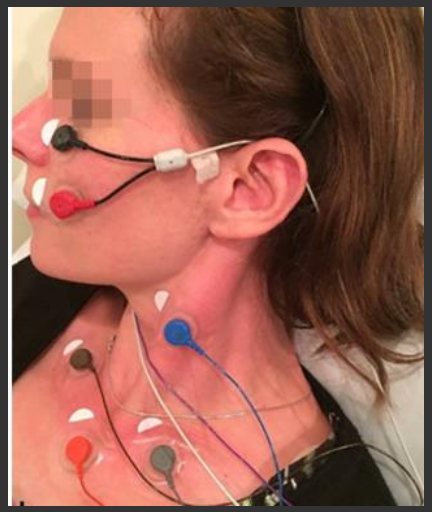

125
250
500
1K
2K
4K
8K
-10
0
10
20
30
40
50
60
70
80
90
100

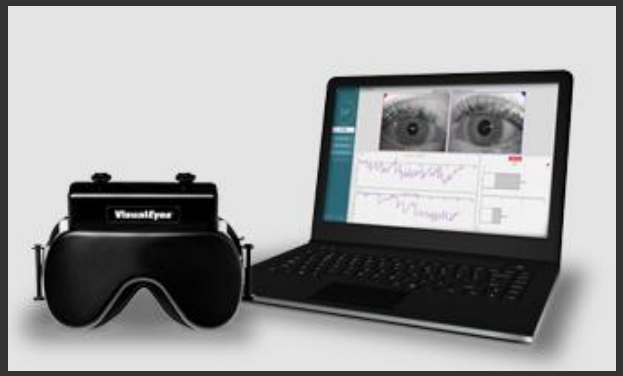
Key Action Statement 4

- Option:
  - Clinicians may offer MRI of IAC/posterior fossa when evaluating for MD and an audiometrically verified asymmetric SNHL
    - Asymmetry defined as:
      - 1. difference of >15 dB in PTA between the ears
      - 2. difference of > 15% in WRS between the ears
    - Caveats:
      - 1. retrocochlear pathology generally involves mid/higher frequency range (≥3000 Hz)
      - 2. Would obtain MRI if considering interventional/surgical treatment

Key Action Statement 5

- Recommendation *against*:
  - Clinicians should not routinely order vestibular function testing/electrocochleography (ECoG)
    - VNG
    - Rotary chair
    - vHIT
    - cVEMP/oVEMP





Vestibular Function Tests

- Caveats:
  - Degree of abnormality on testing poorly correlates with patient-perceived disability
  - Testing often normal if patient not in a period of active symptoms
  - Poor correlation with low frequency testing (calorics) vs. high frequency testing (vHIT)
  - Testing not necessary for diagnosis, but is necessary if considering ablative/surgical therapy

Key Action Statement 6

- Recommendation:
  - Clinicians should educate patients on natural history, treatment options and outcomes for MD
    - Discuss goal is control, not cure
      - Main focus is on vestibular symptoms; cochlear symptoms usually recalcitrant
      - Explain progression of disease; “burned out MD”
    - Range of treatment options

Key Action Statement 7

- Recommendation:
  - Clinicians should offer limited course of vestibular suppressants for management of acute attacks of vertigo
    - Antihistamines (meclizine, diphenhydramine, etc.)
    - Benzodiazepines
      - Consider lorazepam/clonazepam
      - Maybe avoid diazepam/alprazolam
    - Presenter partial to promethazine

Key Action Statement 8

- Recommendation:
  - Clinicians should educate patients on dietary/lifestyle modifications
    - Excessive dietary sodium/caffeine
      - Consider Na+ restriction of 1500 mg/day
    - Stress/anxiety/allergy management
    - Lack of evidence at this point to recommend acupuncture

Key Action Statement 9

- Option:
  - Clinicians may offer diuretics and/or betahistine for maintenance therapy in MD
    - HCTZ/triamterene, acetazolamide, spironolactone
    - Betahistine (strong H3 antagonist)
      - Large dose range (24 mg/day up to 144 mg/day in divided doses)
      - Low side-effect profile, but caution in asthma/PUD
    - CPG makes no recommendation for/against oral steroids/antivirals

Key Action Statement 10

- Recommendation *against*:
  - Clinicians should not prescribe positive pressure therapy
    - Meniett device most common (others available)
      - Requires tympanostomy tube
      - Used 3x/day for at least 6 weeks
      - Can be used long-term
      - Cost $3500
      - Covered as DME by Medicare
      - ? exceptions to recommendation

Key Action Statement 11

- Option:
  - Clinicians may offer intratympanic (IT) steroids for active MD not responsive to noninvasive treatment
    - Level of vertigo control varies widely in studies (31-90%)
    - Protocols not standardized

  - One vs. series of injections?
  - Which steroid?
    - » Methylprednisolone more readily penetrates RW with higher perilymph concentration
    - » Dexamethasone more rapidly absorbed by stria vascularis
  - What concentration?
  - No literature comparing the two

Key Action Statement 12

- Recommendation:
  - Clinicians should offer IT gentamicin for active MD not responsive to non-ablative treatment
    - Estimated complete vertigo control in about 75% of patients in aggregated studies
    - Improved vertigo control in about 90%
    - Counsel risks of further SNHL
      - Substantial decrease in 25%
      - Profound loss in 7%

IT Gentamicin

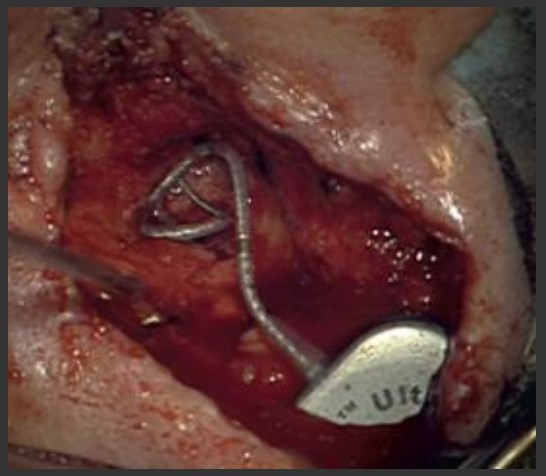
- May be painful if not buffered
- Dosing schedules vary in literature:
  - As needed? Weekly schedule for *xx* weeks?
  - Half-life of gentamicin 4x longer than in blood
  - Additive effect if given in short intervals
  - Goal is partial (not total) chemical labyrinthectomy
- Should perform vestibular function testing prior to and during treatment
  - VEMP, vHIT and rotary chair more sensitive indicator than calorics of ablative effect
- Lack of response after several injections: suspect pseudo-membrane over RW
- Must counsel patient central compensation can take time and may be incomplete

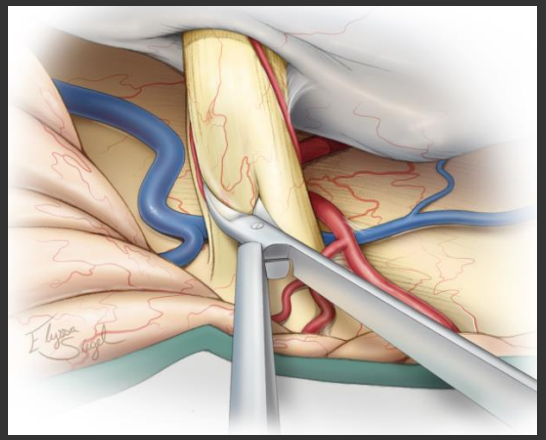
Key Action Statement 13

- Recommendation:
  - Clinicians may offer labyrinthectomy for active MD who have failed less definitive therapy and have non-usable hearing
    - Non-usable hearing considered category D (WRS<50%) per AAO-HNS Hearing Classification Criteria
    - Vertigo relief generally > 95%
    - Particularly beneficial for otolithic drop attacks (crisis of Tumarkin) which occur in small percentage of patients
    - Same issues of vestibular testing pre-op and discussion of incomplete central compensation apply as with IT gentamicin

Statement 13 (continued)

- May consider hearing restoration combining labyrinthectomy with CI
- Vestibular nerve section can be offered in select cases with usable hearing
- CPG makes no recommendation regarding endolymphatic sac surgery
  - Vertigo control lessens over time





Key Action Statement 14a

- Recommendation:
  - Clinicians should offer vestibular physical therapy for chronic imbalance in MD
    - Incomplete central compensation
    - Following ablative procedures
    - Bilateral vestibular hypofunction from MD

Key Action Statement 14b

- Recommendation *against*:
  - Clinicians should not offer vestibular physical therapy for management of acute vertigo in active MD
    - lack of studies using VPT for acute vertigo
    - Caveat: useful for associated BPPV (higher incidence in Meniere's ear)

Key Action Statement 15

- Recommendation:
  - Clinicians should counsel MD patients on the use of amplification or assistive listening devices
    - No effective medical or surgical (other than CI) intervention has proven effective in preventing or correcting SNHL due to MD
    - Fitting aid difficult early in MD with active fluctuations in hearing
    - May be difficult later in the disease due to contracted dynamic range

Statement 15 (continued)

- Other options for nonservicable hearing:
  - CROS aid
  - Bone conductive devices for single-sided deafness
    - Baha
      - Percutaneous
      - Transcutaneous
    - Osia
    - Bonebridge
    - AdHear
  - Cochlear implant

Key Action Statement 16

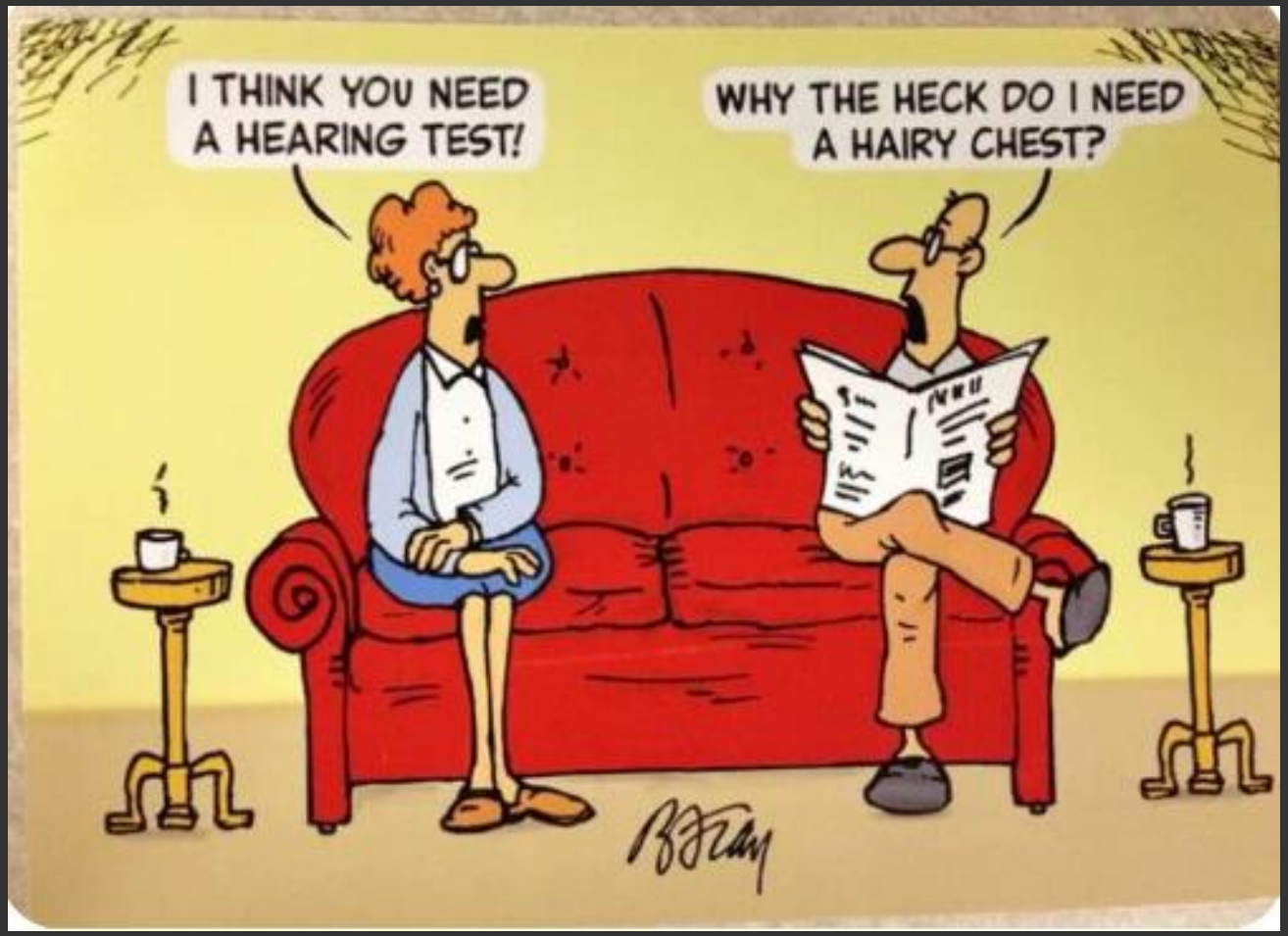
- Recommendation:
  - Clinicians should document clinical course and any change in QOL in MD patients after treatment
    - CPG does not recommend one specific QOL measure over another
    - Follow up should be tailored to individual patient based on activity of the disease

Summary

- Do:
  - Accurately diagnose Meniere's Disease and differentiate from other vestibular disorders
    - Specifically determine if patient has vestibular migraine instead or in addition to MD
  - Perform an audiogram in all patients suspected of MD
  - Educate patient in their disease and treatment options
    - Lifestyle changes
    - Pharmacotherapy
    - Aggressive treatment options when indicated
    - Aural/hearing rehabilitation

Summary

- Do Not:
  - Routinely order vestibular function testing or imaging
    - Must do both prior to contemplating invasive/ablative therapy
  - Use positive pressure therapy
  - Recommend vestibular physical therapy for active vertigo associated with MD


I THINK YOU NEED A HEARING TEST!
WHY THE HECK DO I NEED A HAIRY CHEST?