PT for the patient with dizziness, impaired balance and falls

Lindsay Chrest, PT, DPT, CBIS
Fall incidence

- Falls are most morbid and costly health condition in the elderly
- Causes are multifactorial
- 35% identified as having a vestibular dysfunction
- Patients with dizziness had a 12 fold increase in the odds of falling
Indications for PT referral

- Diagnostic: BPPV, vestibular hypofunction (unilateral or bilateral), vestibular neuritis, vestibular migraines, cervicogenic dizziness, persistent perceptual postural disorder, visual motion sensitivity, Meniere’s disease, Mal de Debarquement, balance deficits

- Health history that increases fall risk: falls, dizziness/vertigo, neuropathy, heart disease, diabetes, stroke, Parkinsons, dementia, depression/anxiety, arthritis/joint pain

- Observations: Difficulty getting up from chair, slow gait speed, unsteadiness with standing or gait, difficulty with flooring transitions, relying on furniture, assistive device or another person for stability
PT referral

- Write order: Eval and Treat
- Provide diagnosis - be specific when able
- Send copy of your visit note/diagnostic testing
PT assessment for dizziness and balance

- Differential diagnosis
- Vestibulo-ocular testing: smooth pursuits, saccades, VOR, VOR cancelation, DVA, HFHS, vHIT
- BPPV testing: Dix-Hallpike, Horizontal roll test
- Balance testing: SOT, CTSIB, Rhomberg/Sharpen Rhomberg, Berg, DGI/FGA
- Additional assessment: Strength, ROM, posture, gait, proprioception, sensation, palpation, joint mobility
Interventions: BPPV

- Canalith repositioning
- Customized habituation
- Balance training
- Progressive fitness and gait re-education
- Education on BPPV

Estimated # of visits: 2-4 treatment sessions
Intervention: Peripheral Vestibular Hypofunction

- Gaze stabilization
  - VOR adaptation/compensation drills
- Balance training
  - Sensory integration and motor response
- Customized habituation
- Progressive fitness and gait re-education
- Visual motion desensitization
- Cervicokinesthetic re-education
- Education on hypofunction, comorbidities, psychosocial factors
Vestibular rehab: Clinical Practice Guidelines

- Peripheral Vestibular Hypofunction
  - Acute unilateral: 1x/wk 2-3 sessions
  - Chronic unilateral: 1x/wk 4-6 sessions
  - Bilateral: 1x/wk 8-12 sessions

- Patient populations that may require additional sessions:
  - Cognitive or mobility deficits
  - Moderate-severe symptoms sensitivity
  - Taking vestibular suppressants
Intervention: Balance disorders/Falls

- Static and dynamic balance exercise
- Strengthening/core stabilization
- Progressive fitness training
- Gait training and assistive device training as needed
- Education on fall prevention, balance system, comorbidities

- Estimated # of visits: 4-12 treatment sessions
Summary

- PT intervention can reduce fall risk, improve balance and resolve/improve dizziness
- Assist patients in understanding what to expect from PT
  - assessment
  - multiple follow up visits
  - daily home exercises
- Collaborate with your PT for improved quality of care
References

- American Physical Therapy Association
  - Clinical Practice Guidelines for Peripheral Vestibular Hypofunction
  - Available on Academy of Neurology Physical Therapy (www.neuropt.org/Vestibular Rehabilitation)
- American Geriatrics Society
- CDC “STEADI” Algorithm for Fall Risk Assessment & Interventions
Thank you!
AUDIOLoGY AND MENTAL HEALTH

Tamara L. Statz, MA, LMFT
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WHO IS TAMARA

- Licensed Marriage and Family Therapist
- Vibrant Living Senior Services, LLC
  - Private practice
  - In-home mental health therapy for older adults and families
- University of Minnesota
  - School of Public Health
  - Research clinician for interventions to assist family caregivers of individuals living with memory loss
  - Additional focus on racial disparities in nursing homes
COGNITIVE DECLINE
WHAT IS DEMENTIA?

- “Umbrella term”
- Describes neurological, progressive disorders
- 25-100 types of disease processes that lead to dementia
- Characterized by symptoms such as:
  - Memory loss
  - Communication issues
  - Confusion
  - Disorientation to time and place
  - Impaired judgment
  - Sleep disturbances
MOS T COMMON TYPES OF DEMENTIA

- **Alzheimer’s Disease (AD)** – AD is the most common type of dementia. It affects memory first and later progresses to affect other cognitive (brain) abilities, such as speech, ability to reason, and movement.

- **Vascular or Multi-Infarct Dementia** – This type of dementia is often the result of a stroke in which small areas of the brain are irreversibly damaged. Onset of vascular dementia is often sudden. Symptoms depend upon the area of the brain affected, but often memory and other cognitive functions, such as decision-making, are impaired.

- **Dementia with Lewy Bodies (DLB)** – DLB leads to a decrease in cognitive ability, hallucinations, movement problems, and delusions.

- **Frontotemporal Dementia** – Abbreviated as FTD, this type of dementia affects personality and speech, but not memory.

https://www.dementiacarecentral.com/aboutdementia/facts/types/
DIAGNOSIS OF DEMENTIA

- Medical history
- Physical exam
- Neurological exam
- Mental status exam
- Brain imaging/scans
- Laboratory testing
HEARING LOSS AND COGNITION
Strong link between hearing loss and dementia

According to a 2001 study by Lin, et al., “…people with mild hearing loss are two times as likely to develop dementia, and this increases to three times for those with moderate hearing loss. The reasons for this relationship are not clear, but communication difficulties may be one reason, as both hearing loss and dementia can make communication more difficult.”
IS YOUR APPOINTMENT DEMENTIA-FRIENDLY?

- One question at a time, if necessary repeat exactly what you asked
  - Give patient time to answer. This is a common complaint from my clients, that family or other professionals rush them or make assumptions.
  - When in doubt, folks might say “Yes” or nod, because they think that is the answer that you or their family want

- No jargon, figures of speech, metaphor, be literal

- Use natural facial expressions and gestures

- Ask, ‘Do you understand what I’m asking?’
  - Patient might not understand what words mean

- Room is well-lit, distraction-free, quiet from outside noise

- Speaking with caregiver as well, s/he will have information that the person with dementia may not mention, may report incorrectly
  - Can be done separately if appropriate
MISDIAGNOSIS

- Not just the presence or absence of hearing loss, but the degree of it
- Undiagnosed hearing loss can lead to inaccurate diagnosis of dementia
- Jorgensen and colleagues point out that a large proportion of the older population have mild-to-moderately severe hearing loss, and 16% of the participants with this level of hearing loss in the study would have been misdiagnosed with dementia. As hearing loss worsens, the chance for misdiagnosis becomes higher
HEARING LOSS AND MENTAL WELLBEING
IMPACT ON WELLBEING

- Hearing loss can lead to social isolation
  - Embarrassment about hearing loss and physical decline
  - Confusion about how or why or wear hearing aides
  - Depending on staff in LTC settings to put in hearing aides each morning
    - “Too much work.” “Why try?”
- Relationship between social isolation and cognitive decline
- Vulnerability of individuals who cannot hear, living in LTC settings
  - Are LTC staff adequately trained to administer hearing aides?
    - How can we improve this?
EMOTIONAL ASPECTS OF DECLINE

- GRIEF
  - Watching one’s own body decline before your eyes
  - Wondering what’s going to go next
  - Denial, frustration, anger, impatience with oneself
  - Trouble articulating feelings can lead to challenging communication with family members, misunderstandings
  - Embarrassed to wear hearing aides or ask for help
FAMILY DYNAMICS OF HEARING LOSS
FAMILY DYNAMICS

- Who is bringing mom to appointments?
  - Could lead to stress during appointment, having to take time off of work, stressful transportation situations to get to appointments
  - Are siblings not contributing / showing up?

- COST
  - How are hearing aides being paid for? Who is contributing?

- Opinions about types of treatment
  - Are hearing aides “really” necessary?
REFERRAL FOR COGNITIVE ASSESSMENT

- Confusion unrelated to hearing loss
- Personal hygiene decline from previous level
- Caregiver reports possible cognitive decline or other symptoms

- Neurology or neuropsychology
  - HealthPartners Neuroscience Center
  - [https://www.healthpartners.com/find/centers/neuroscience/neurology](https://www.healthpartners.com/find/centers/neuroscience/neurology)
  - Specialized cognitive testing, assessment, scans, lab work
Patient is withdrawn, you suspect depression or isolation

Patient describes overwhelming grief, depression, anxiety

Family conflict during the appointment or the patient or caregiver mentions this in conversation

LISTEN TO YOUR GUT! Worst case you refer and they say “No, thanks.”

HealthPartners Center for Memory and Aging
RESOURCES

- https://www.dementiacarecentral.com/
- https://www.healthpartners.com/institute/about/research-education-centers/center-memory-aging/
Medications and Balance

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MTM Practitioner

2/22/2019
Medications and Balance

- Objective:
  - Identify common medications that negatively impact balance
Medications and Balance

High Risk Medications

- Antihistamines (first generation)
- Antidepressants
- Antiepileptics
- Antihypertensives
- Antipsychotics
- Antispasmodics

- Benzodiazepines
- Non-beno, benzo receptor agonists
- Skeletal muscle relaxants
- Opioids
- Urinary incontinence meds
Medications and Balance

- Antihistamines
  - First generation:
    - ex. Diphenhydramine, Hydroxyzine
    - Be aware of combo products!
    - Highly anticholinergic
      - Dizziness, sedation, confusion, etc.
    - Diphenhydramine may also contribute to tinnitus
Medications and Balance

- Antidepressants
  - Highest risk: anticholinergic properties
    - Tricyclics (Amitriptyline, Nortriptyline)
    - Paroxetine
    - All of the above may contribute to tinnitus
Medications and Balance

- Antiepileptics
  - Ataxia as a concern:
    - Phenytoin, Carbamazepine*, Lamotrigine*
    - Effect sodium channel conductance
    - Phenobarbital, Valproid acid*, Gabapentin*, Keppra

*also associated with risk of tinnitus
Medications and Balance

- **Antihypertensives**
  - Tight BP control increases risk of dizziness, falls
  - Watch for orthostasis
  - Higher risk:
    - Clonidine (alpha2-agonist)
      - CNS side effects, tinnitus
    - Alpha1-blockers
      - ex, Terazosin, Doxazosin
      - Dizziness, orthostasis, tinnitus
  - Many classes may contribute to tinnitus
    - ACEi’s, CCBs, Loop diuretics, Alpha1- blockers
Medications and Balance

- **Antipsychotics**
  - Typical and atypical
    - **Typical**: ex, Haloperidol, Thioridazine, Chlorpromazine
    - **Atypical**: ex, Olanzapine, Quetiapine, Risperidone
  - Orthostasis, dizziness, sedation
  - Atypicals may contribute to tinnitus
Medications and Balance

- **Antispasmodics**
  - GI: ex, Dicyclomine, Hyoscyamine
    - highly anticholinergic

- **Urinary incontinence meds**
  - ex, Oxybutynin*, Tolterodine, Solifenacin, Trospium
    - highly anticholinergic

*may cause tinnitus
Medications and Balance

- Benzodiazepines
  - Short and long-acting
  - ex, Alprazolam, Lorazepam, Temazepam, Diazepam
  - Dizziness, unsteadiness, sedation, gait disturbances
  - Also implicated in tinnitus

- Non-benzo, benzo receptor agonists
  - ex, Zolpidem
  - Similar risks to benzos
Medications and Balance

- Skeletal muscle relaxants
  - e.g., Cyclobenzaprine*, Carisoprodol, Methocarbamol, Orphenadrine*, Tizanidine*, Baclofen*
  - Anticholinergic activity higher with Orphenadrine, Tizanidine, Cyclobenzaprine

* may contribute to tinnitus
Medications and Balance

- **Opioids**
  - CNS side effects contribute to balance difficulty
  - Combos containing tylenol may be associated with increased risk of hearing loss (with chronic use)
  - Some may contribute to tinnitus
    - ex, hydrocodone, oxycodone
Medications and Balance

References:
EHDI COLLABORATION
Role, Reporting & Resources

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Early Hearing Detection and Intervention Program
Audiologists have a critical role:

- ensuring that screening and rescreening occurs by one month of age
- promptly referring for or completing diagnostic hearing evaluation before three months of age
- providing follow-up for infants who have confirmed conductive loss due to suspected middle ear fluid (after not passing newborn hearing screen), until final hearing status is determined
- fitting amplification when chosen by the family for infants with confirmed permanent hearing loss
- connecting those with confirmed permanent hearing loss to early intervention services and family support by six months of age, or as soon as possible after diagnosis
ROLE of MDH EHDI

Technical Assistance:

- Advisory Committee
- Protocols & timelines
- Support facilities conducting rescreening & audiological assessment
- Assisting providers throughout the hearing screening & follow-up process
- Resources
ROLE of MDH EHDI

- **Surveillance:**
  - Establishing a performance data set and reviewing performance data
  - Evaluating data in order to make system improvements
  - Social Determinants – Assessing Needs

Diagram:

- **DATA** → **KNOWLEDGE** → **ACTION**
ROLE of MDH EHDI

Follow-up (short-term & long-term):
- Screening
- Diagnosis
- Connection to Services
- Medical & Audiological Management

Technical Assistance ~ Surveillance ~ Follow-up

Minnesota has ~ 70,000 births each year
6.35% (4,240) need follow-up (missed & refer)
REPORTING

- Provider reporting to MDH–EHDI is mandated public health surveillance and does NOT require signed consent from the parent/caregiver.

- Report audiological rescreen and diagnostic assessment results and failed/rescheduled appointments to the infant’s primary care physician and MDH–EHDI program. Report to MDH within one week of the scheduled visit date.

- Continue reporting of follow-up for infants who have confirmed conductive loss due to suspected middle ear fluid (after not passing newborn hearing screen), until final hearing status is determined.
REPORTING

- Report assessment results for all newly confirmed permanent hearing loss through age ten years and eleven months to MDH–EHDI.

- Out of state residents who receive outpatient hearing screening follow-up and new diagnosis of hearing loss in Minnesota, should also be reported to MDH–EHDI.

- Return the Amplification Report.
REPORTING

Report all follow-up on newborn screening referrals, including all newly confirmed permanent hearing loss through age ten to the Minnesota Department of Health.

Refer Me Grow (1-866) 693-GROW
www.HelpMeGrowMN.org

Help Me Grow (HMG) informs parents, professionals and caregivers about developmental milestones. Refer children (0-5) through HMG for a free confidential screening or comprehensive evaluation. Refer older children to their elementary school.

Connect
MN Hands & Voices

Minnesota Hands & Voices offers parent-to-parent support through trained "Guides by your Side." Guides are parents of children who are deaf or hard of hearing, and can be used as a local community resource.
RESOURCES

Materials

- Guidelines
- Report forms, initial identification checklist
- Free orderable materials
Website: MN EHDI  http://www.improveehdi.org/mn/
RESOURCES

- **SoundMatters eNewsletter**

- **Educational opportunities**
  - MDH-sponsored 2018 Boys Town Learning Center Minnesota Audiologist Professional Development
  - MDH-sponsored Pediatric Pre-Session at Upper Midwest Audiology Conference
RESOURCES

Data

- Performance/Benchmarks
- Outcomes
Number of children reported as D/HH in 2017 is similar to previous several years.
Time to diagnosis

*of infants with a reported diagnosis

- Within 90 days of birth: 52.6%
- Within 90-180 days of birth: 24.7%
- After 180 days of birth: 22.7%
Top Reasons for No Diagnosis

- No audiology appointment made: 32%
- Family no show appointment: 31%
- Unable to contact: 17%
- Primary Care Provider Not rescreening: 7%
- Primary Care Provider unknown: 5%
- Audiology process discontinued: 3%
- Other: 2%
- Dx Prolonged: 3%
ECLDS

A web-based, integrated system that combines data collected by the Departments of Education, Human Services and Health focused on early childhood.

- ECLDS www.eclds.mn.gov

The system protects the privacy of individual children by not showing data for individual children. It shows population results only.
Thank You!