Department of Surgery
2026 Research Day
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Title:
Association Between Hearing Loss and Dementia Prevalence in a Large Electronic Health Record Cohort

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Background:
Hearing loss affects approximately one-third of patients over the age of 65 and has been proposed as a risk factor in cognitive decline and dementia. However, the relationship between hearing loss and dementia is not completely understood. This study aims to evaluate the prevalence of dementia among patients with hearing loss compared with patients without hearing loss using large electronic database records to better characterize the relationship between hearing loss and dementia.

Methods:
This retrospective study used TriNetX to measure populations of patients with hearing loss and dementia. Incidences of dementia diagnoses (ICD-10 F02 and ICD-10 F03) were compared in patients with hearing loss (ICD-10 H90) and without hearing loss. Incidences of dementia were also compared in patients using hearing aids (CPT 92593, CPT 1012935, HCPCS V5261, HCPCS V5257, HCPCS V5267). Mean age was compared between patients with dementia with and without hearing loss using cohort analyses.

Results (or Preliminary Results):
The mean age of patients with dementia was 83 years, with women comprising 59.4% of the cohort and men 40.5%. The mean age among patients ≤65 years with dementia and hearing loss was 54 years, compared with 55 years among those with dementia without hearing loss. Among patients 65 years of age and younger, the prevalence of dementia was 0.41% in patients with hearing loss, compared with 0.065% in patients without hearing loss, corresponding to a relative risk of 6.24 (95% CI: 6.17–6.51, $p < 0.001$). In this age group, patients with documented hearing aid use had a dementia prevalence of 0.46%. Among patients 65 years of age and older, the prevalence of dementia was 8.7% in patients with hearing loss, compared with 3.2% in those without hearing loss, yielding a relative risk of 2.69 (95% CI: 2.67–2.70, $p < 0.001$). In this group, patients with documented hearing aid use had a dementia prevalence of 11.3%.

Conclusions (or Preliminary Conclusions):
Hearing loss was strongly associated with a higher prevalence of dementia in both younger (≤65 years) and older (≥65 years) populations, with a particularly pronounced relative risk observed in the younger cohort. In the younger cohort, patients with hearing loss tend to develop dementia at a slightly earlier age. These findings highlight a significant association between hearing loss and dementia across age groups and underscore the importance of further investigation into the role of hearing loss as a potential modifiable risk factor for cognitive decline. Patients with documented hearing aid use demonstrated a higher dementia prevalence than that observed in the overall hearing loss group; however, this finding likely reflects confounding by severity of hearing loss and differences in healthcare utilization, rather than a causal effect of hearing aid use on dementia risk.