

SESSION 2095 (SYMPOSIUM)

LATEST ADVANCES IN UNDERSTANDING THE RELATIONSHIPS BETWEEN FRAILTY AND COGNITIVE IMPAIRMENT

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As two of the most common geriatric conditions, frailty and cognitive impairment often coexist, and are known to predict poor health outcomes separately and jointly. The link between frailty and cognitive impairment may result from the fact that many of the aging processes underlying frailty may also be responsible for brain aging and cognitive decline. What is unknown is: (1) whether frailty as a measure of physiological resilience is predictive of dementia above and beyond neuropathology and cognitive decline; (2) whether there are individual characteristics that uniquely identify separate vs. joint presence of physical frailty and cognitive impairment. To begin to address these questions, Talk 1 reviews concept of frailty in relationship to reserve and resilience and discusses theoretical underpinnings of three integrated phenotypes of physical and cognitive impairment; Talk 2 uses data from two epidemiological cohorts to study the relationship between frailty and dementia after accounting for neuropathology. Talk 3 uses data from the Gait & Brain Study to compare the strength of associations of cognitive impairment alone vs. cognitive impairment plus physical frailty (or gait performance) with incident dementia. Talk 4 uses data from the National Health and Aging Trends Study to develop a U.S. national profile on the intersection between physical frailty and cognitive impairment in community-dwelling older adults. Together, findings from this study help elucidate the interconnection between physical frailty and cognitive impairment, as well as clinical utility of joint consideration of cognitive decline and physical frailty for predicting risk of dementia.

INTEGRATING FRAILTY AND COGNITIVE PHENOTYPES: THEORY, MEASUREMENT, APPLICATIONS

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The fact that frailty and cognitive impairment are associated and often coexist in older adults has led to the popular

view of expanding the definition of frailty to include cognitive impairment. However, there is great variability in approaches to and assumptions regarding the integrated phenotypes of physical frailty and cognitive impairment. By reviewing the theoretical underpinnings of three integrated phenotypes of physical and cognitive impairments, this talk advocates the incorporation of biological theories in phenotype development that helps determine shared and distinct pathways in the progression to physical and cognitive impairments.

THE ROLE OF FRAILTY IN DEMENTIA EXPRESSION: EVIDENCE FROM CLINICAL-PATHOLOGIC COHORT STUDIES

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A growing body of evidence suggests that pathological features of dementia are diverse and don't wholly explain variability in dementia incidence. Objective: discuss the role of frailty in dementia expression using evidence from clinical-pathologic cohort studies. Methods: Cross-sectional relationships between neuropathology (Braak, CERAD staging), frailty (frailty index at last study visit before death), and dementia diagnosis at death were performed using data from the Rush Memory and Aging Project (MAP) and the Cambridge City Over 75s Cohort study (CC75C). Results: Participants were 89.7±6.2 and 92.2±4.5 years in MAP (n=451) and CC75C (n=177) and mostly female (69.4-70.1%). Most had dementia (52.8%-59.3%). Frailty was normally distributed (mean FI 0.42±0.18 in MAP and 0.34±0.16 in CC75C). Frailty was associated with dementia in MAP (OR=1.88, p<0.001) and CC75C (OR=1.30, p=0.03) after controlling for age, sex, time to death, and neuropathology. Longitudinal analysis is in progress. Frailty appears to play a meaningful role in dementia expression.

PHYSICAL FRAILTY, COGNITIVE FRAILTY, AND THE RISK OF DEMENTIA IN THE GAIT AND BRAIN STUDY

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Cognitive-frailty has been proposed as a distinctive entity which precludes dementia. We examined the relationship between physical frailty, cognitive status, and gait performance as predictors of cognitive decline and incident dementia. Using a cohort study of 252 community older adults free of dementia at baseline, we found that participants with frailty had a higher prevalence of cognitive impairment (77%) compared to those without (54%, p=0.02) but the risk of progression to dementia was not significant. Adding cognitive impairment to the frailty phenotype (cognitive-frailty)