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ALZHEIMER'S DISEASE Knowledge Hub

Expert Commentary

Prof. Ming-Chyi Pai discusses keys elements in understanding Alzheimer's Disease: Prevalence, Etiology, Risk Factors, and Biological Definitions

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Prevalence, Etiology, and Risk Factors of Alzheimer's Disease

- **Prevalence**:
  - 6.9 million older adults in the US with Alzheimer's, plus 200,000 under 65 with younger-onset AD

- **Etiology:**
  - Multiple factors including genetics, lifestyle, and environment contribute to AD development

- **Risk Factors:**
  - Age, genetics, and family history
  - Modifiable factors: cardiovascular health, education, social engagement, traumatic brain injury
  - Other factors: sleep, air pollution, critical illness in older adults

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Towards a Biological Definition of AD (ATN(x))

- AD defined biologically, not based on clinical syndromes

- Disease continuum from asymptomatic brain pathology to clinical symptoms

- Diagnosis in vivo via abnormalities on core biomarkers (fluid and imaging)

Classification and its Potential Clinical Use

To be determined but promising potential in clinical practice for classification methods

Introduction

- **Introduction to AD Pathology**
  - Pathology begins in entorhinal cortex, hippocampus, and surrounding regions
  - Early symptoms: episodic memory and spatial cognition impairment
  - Progression to other brain regions, impacting other cognitive domains and behavioral symptoms
  - Variants with initial symptoms beyond memory impairment: aphasia, visuospatial disorientation, frontal lobe syndrome

- **Clinical Diagnosis of AD**
  - Based on clinical features, mental examinations, neuroimaging, and related investigations
  - Supported by core biomarkers including fluid or molecular imaging in vivo

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