Other Dementias: A Comprehensive Review of Normal Pressure Hydrocephalus, Creutzfeldt–Jakob Disease, Huntington's Disease, HIV-Associated Dementia, and Toxin- and Infection-Related Cognitive Disorders

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Abstract

Background. Although Alzheimer's disease and vascular dementia account for the majority of dementia cases worldwide, several less common disorders collectively contribute substantially to cognitive impairment, disability, caregiver burden, and healthcare utilization. These conditions include normal pressure hydrocephalus (NPH), Creutzfeldt–Jakob disease (CJD), Huntington's disease (HD), HIV-associated dementia (HAD), and toxin- and infection-related dementias. Unlike many common neurodegenerative dementias, several of these disorders are potentially reversible or amenable to disease-specific interventions, making early recognition clinically important.

Objective. To provide a comprehensive review of the epidemiology, pathophysiology, clinical manifestations, diagnosis, management, prognosis, and future directions of major non-Alzheimer dementias encountered in neurological and geriatric practice.

Methods. A narrative review approach was employed using contemporary evidence from peer-reviewed literature, international guidelines, and major neurology, infectious disease, and dementia references. Emphasis was placed on diagnostic advances, biomarker development, neuroimaging findings, and emerging therapeutic strategies.

Results. NPH remains one of the most treatable causes of cognitive decline, with cerebrospinal fluid diversion producing meaningful improvement in appropriately selected patients. CJD represents a rapidly progressive prion disease characterized by severe neurological deterioration and poor survival. HD is an autosomal dominant neurodegenerative disorder caused by CAG repeat expansion within the huntingtin gene and serves as a model for gene-targeted therapeutic development. HIV-associated dementia has become less common in the era of combination antiretroviral therapy but continues to contribute significantly to morbidity. Toxin- and infection-related dementias encompass a heterogeneous group of disorders in which early diagnosis may prevent irreversible neurological injury.

Conclusions. The biological diversity of these disorders highlights the need for individualized diagnostic and therapeutic approaches. Advances in biomarkers, neuroimaging, genetics, artificial intelligence, and precision medicine are expected to transform the evaluation and management of these conditions. Improved recognition of potentially reversible causes of dementia remains essential for optimizing patient outcomes.

Keywords: Dementia; Normal Pressure Hydrocephalus; Creutzfeldt–Jakob Disease; Huntington's Disease; HIV-Associated Dementia; Neurocognitive Disorders; Prion Disease; Cognitive Impairment; Biomarkers; Precision Medicine.