Evidence-Based Complementary and Alternative Medicine

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Special Issue on

# Multiple Bioactivities of Traditional Medicinal Herbs for Treatment of Neurodegenerative Diseases

CALL FOR PAPERS

Neurodegenerative diseases are debilitating and incurable conditions in the central nervous system (CNS). They are characterized by neuronal dysfunction and are often associated with atrophy of the affected nervous system structures. Age-related dementia constitutes a major subset of neurodegenerative disease. Alzheimer's disease (AD) is the most prevalent clinical form of dementia in aging populations, and 43% of individuals aged ≥ 85 years are thought to have AD in the United States. Parkinson's disease (PD), another common neurodegenerative disease prevalent among the elderly, affects 1–3% of the population aged > 60 years. The United Nations population projections have estimated a worldwide population of 400 million individuals aged ≥ 80 years by 2050 to have a neurodegenerative disease. Owing to the financial, societal, and personal impact of these diseases, etiologies, prevention, and treatment have become the major focus of basic and clinical research. Etiological studies have revealed an association between neurodegenerative diseases and genetic factors, which is variable within populations for one disease state.

Alzheimer's disease is also linked to mutation in a specific gene; however, downstream effects of its protein product on symptoms including dementia are not fully understood. Multiple signaling pathways constitute the molecular basis of the effects of genetic variation, lifestyle, and environmental factors including trauma and infection in neurodegenerative diseases. Neuropathological hallmarks of dementia include β-amyloid plaques and neurofibrillary tangles in AD and Lewy body inclusions in PD. However, while misfolded protein aggregation clearly plays a role in neurodegenerative disease, this is evidently only a signature of neuronal damage and additional causative factors remain to be discerned. The roles of inflammation and nitric oxide signaling are active areas of investigation. The effects of these and other key factors on transcriptional regulation and initiation of apoptosis and neurotoxicity continue to be intensively explored. The pathogenesis of neurodegenerative diseases remains unclear and the present one-drug, one-target paradigm for treating neurodegenerative diseases appears clinically unsuccessful.

In many papers, the pathological effects of neurodegenerative diseases are a result of altered activity in multiple pathways. Thus, new pharmacological therapeutic strategies, such as natural compounds or medicinal herbal extracts composed of multiple compounds, are designed to specifically act on multiple neural and biochemical targets.

Thus, we invite investigators to contribute brief and original articles on neurodegenerative diseases via multiple bioactivities and the potential therapeutic effects of medicinal herbs on these disorders. We are particularly interested in articles on clinical or animal-based evaluations of the effectiveness of traditional herbs, including formula.

Potential topics include but are not limited to the following:

- Animal/clinical studies on the effectiveness of medicinal herbs against neurodegenerative diseases, including AD and PD, via apoptosis and inflammation, immune dysfunction, oxidative stress, and other factors
- Mechanistic studies on neurodegenerative diseases and herb-derived therapeutics using animal or cellular models

Authors can submit their manuscripts through the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/ecam/tmha/.

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