Life Science Seminar Series

How NOT to study a human disease: Alzheimer's disease 2015

by

Prof. Karl HERRUP

Abstract

Alzheimer's disease is the most common human dementia of late life. After age 85, the odds of being affected by symptoms of Alzheimer's are roughly 1-in-2. Since its identification as a disease, over 100 years ago, the complex set of Alzheimer's clinical symptoms has been linked with a pair of peculiar deposits in the brain, one of which consists of waxy plaques of a small peptide fragment derived by proteolysis from the amyloid precursor protein (APP). With the discovery that three rare autosomal dominant Alzheimer's disease genes encoded APP and two homologous proteases that free the C-terminal of the APP fragment (amyloid β or Aβ), the field quickly coalesced around a disease model known as the amyloid cascade hypothesis. This model, which has dominated the field for over 20 years, charts a linear pathway from Aβ deposition to Alzheimer's. Careful review, however, reveals several areas in which the facts of Alzheimer's disease research simply do not fit the predictions of the theory. These inconsistencies will be reviewed and the case for rejecting the amyloid cascade hypothesis will be made. A brief accounting of the costs of clinging to a largely disproven hypothesis will also be attempted. Moving forward now becomes a daunting academic, clinical and biotechnological challenge. Arguably, we are facing a public health disaster of enormous proportions with no clear roadmap of where to focus our research. A final segment of the seminar will review the most promising pathways that may lead us from our current state of knowledge to true ways to attack this devastating human disease.

Date : 2 October 2015 (Friday)
Time : 4:00 p.m.
Venue : Padma and Hari Harilela Lecture Theater (LT-C) 
The HK University of Science & Technology, Clear Water Bay, Kowloon

(Host faculty: Prof. Bik Tye)

All are Welcome!!