Medical Pharmacology Seminar

Professor Christopher Chen

Director, Memory Aging and Cognition Centre
National University Health System, Singapore;
Department of Pharmacology, Yong Loo Lin School of Medicine
National University of Singapore, Singapore

Anti-amyloid monoclonal antibody therapies for early Alzheimer's Disease: Trials, Tribulations, Success and Ways Forward

Monoclonal antibodies (MABs) serve as a promising therapeutic approach for AD by selectively targeting key pathogenic factors, such as amyloid-β (Aβ) peptide. MABs targeting Aβ can categorized based on their affinity to diverse conformational features of Aβ, including monomer, fibril, protofibril, and plaque forms of Aβ. First-generation MABs targeting the non-toxic monomeric Aβ, such as solanezumab, bapineuzumab, and crenezumab, failed to demonstrate clinical benefit for AD in clinical trials. In contrast, second-generation MABs, including aducanumab, lecanemab, donanemab, and gantenerumab directed against pathogenic Aβ species and aggregates have shown that reducing Aβ deposition can be an effective strategy to slow cognitive impairment in AD. Specifically, the U.S. Food and Drug Administration has approved three anti-amyloid MABs, aducanumab (Aduhelm®), lecanemab (Leqembi®), and donanemab (Kisunla™). This talk will provide a overview of the current status, mechanisms, outcomes, and limitations of second-generation MABs for the clinical treatment of AD. In addition, future directions of anti-amyloid MABs in the treatment of AD will be discussed.

Date: 20 November 2025, Thursday   **Time: 1.30pm – 2.30pm**

Venue: MD3-02-01 – MD3, Tiered room, level 2

Chaired by: A/Prof. Minh Le