**PREDICTION OF TREATMENT RESPONSE WITH DONEPEZIL IN ALZHEIMER’S DISEASE**

Howard Mark Chertkow, Lady Davis Institute, McGill Univ, Montreal, PQ Canada; Susan J E Martha, York Univ, Toronto, ON Canada; Howard Bergeman, Ron Shondorf, Jewish Gen Hosp, McGill Univ, Montreal, PQ Canada; Natalie Phillips, Lady Davis Institute, Concordia Univ, Montreal, PQ Canada; Mario Beureau, Inst Univ de Geriatrie de Montreal, Montreal, PQ Canada; George Chong, Jewish Gen Hosp, Montreal, PQ Canada; Andrea LeBlanc, Lady Davis Institute, McGill Univ, Montreal, PQ Canada

Objectives: To elucidate the predictors of response to Donepezil in patients with mild to moderate Alzheimer’s Disease. Background: Donepezil, a cholinesterase inhibitor, is the primary available symptomatic treatment for Alzheimer’s Disease (AD). Little is known about means of predicting which patients will respond. Gender (female), APO-E genotype (absence of E4), and severity of dementia have all been suggested as predictors of response. It is also unknown whether there are specific cognitive or neuropsychological markers which predict response to the medication. Design/Methods: Thirty individuals with probable AD (mean age 74 years, education 11 years, Folstein Mini-mental state exam 23 of 30) were recruited from a tertiary care memory clinic. After initial neuropsychological, cognitive, imaging, and APO-E genotyping, they were treated with Donepezil 10 mg daily for 6 months. Subject response was assessed using the ADAS-Cog, Folstein Mini-mental state exam (MMSE), and CIBIC (clinician-based evaluation of change). A combination algorithm of these measures was used to quantitate response to treatment at six months. Results: Eighteen of the thirty were rated as having responded (improved score on the algorithm), while twelve were rated as non-responders. There was no difference in initial age, education, initial MMSE, or severity of memory loss between responders and non-responders. Women were significantly over-represented among the responders (13/18) vs non-responders (4/12). Presence or absence of one or two Apo-E4 alleles did not predict response to Donepezil. Non-responders were significantly more impaired in naming and language processing, are the strongest predictors of response to Donepezil in mild to moderate Alzheimer’s Disease. Supported by the Medical Research Council of Canada and the MRC/PICAM program

**STEREOLOGIC ANALYSIS OF VULNERABLE NEOCORTICAL NEURONS IN NORMAL AGING AND ALZHEIMER’S DISEASE**

Thierry Bussiere, Bridget A Wicinski, Grace L Lin, Daniel P Perl, Mount Sinai Sch of Medicine, New York, NY; Peter Davies, Albert Einstein Coll of Medicine, Bronx, NY; Ralph A Nixon, Nathan Kline Institute, Orangeburg, NY; John E Morrison, Patrick R Hof, Mount Sinai Sch of Medicine, New York, NY

Neurofibrillary tangles (NFT), senile plaques, neuronal and synaptic loss are the characteristic cerebral lesions of Alzheimer’s disease (AD). These pathological hallmarks are also observed in normal aging brains, where they display a different qualitative and quantitative pattern. We analyzed the critical stages between the...