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Dementia 1

17
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Dementia 1
Tau oligomers as a therapeutic target for Alzheimer's disease

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Background: The majority of neurodegenerative tauopathies are associated with the pathological accumulation of additional amyloid proteins, notably amyloid-β in Alzheimer's disease (AD). Studies have shown that intermediate aggregates known as oligomers are the most toxic species in disease. The common toxic factor in these diseases, the tau oligomer, is a promising therapeutic target in mixed pathology diseases. We have recently shown that passive immunotherapy with a novel tau oligomer-specific antibody is effective in two different pure tauopathy models, P301L and Htau mice. Here we directly test the interaction between tau and amyloid oligomers and the efficacy of anti-tau oligomer immunotherapy in a model of AD.
Methods: We have evaluated brain tissue and oligomers derived from AD patients for the interaction between amyloid proteins and tau using biochemical and immunohistochemical analysis with our novel oligomer-specific antibodies. To investigate the efficacy of immunotherapy with anti-tau oligomer monoclonal antibody (TOMA) in an AD model, we examined the behavior and pathology of treated Tg2576 mice.
Results: We found that Aβ oligomers can seed the aggregation of tau *in vitro* and are colocalized in disease, forming hybrid oligomers. Treatment with TOMA reverses cognitive detriment and decreases tau oligomer levels in Tg2576 mice, while increasing stable Aβ plaque levels.
Conclusions: Our results suggest that oligomeric Aβ has a synergistic relationship with tau oligomers. This combined with passive immunotherapy results suggest that tau oligomers are a good therapeutic target in AD and potentially in other mixed pathology tauopathies.

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20
WFN15-0527
Dementia 1
Variations in public and professional stakeholders' awareness and attitudes on diagnosis and care provisions for dementia — A national survey

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Introduction: Sir William Beveridge Foundation (SWBF), a charity based in London & Bangladesh pioneered a service provision for Dementia care in Bangladesh (population 166 million). There is no specific clinical or governmental strategy despite increasing size of the patient cohort and expanding economy.
Objectives: To assess the baseline situation and advise the government to develop a clinical, educational and socio-political strategy for Dementia care.
Patients and methods: A mixed methodological approach of quantitative survey and Qualitative appraisal of seven categories of stakeholders ranging from policy makers to carers and clinicians. Purposive sampling on stakeholders from seven cities was performed.

Given the prevalence rate, population size, confidence level and design effect, the sample size of different categories of respondents was estimated using the general formulae (Cochran):

$$n = N_0^{/1+N0} / N = n^0 / C.$$

Total sample size >1000 people e.g. 65 clinicians who have treated about 90,484 patients that year. Data collection methods included telephone, face to face and internet based interactions. Response rate was 70%.
Outcome tools: Semi-structured questionnaire, in-depth interview, Talking Points for key Informant Interviews.
Results: There is wide-spread variation in the level, accuracy and source of knowledge and perceptions amongst and within specific categories of stakeholders. Comparison analysis with prevalence data from Alzheimer's International, it appears that number of AD patients in Bangladesh will be 1.781 million in 2050.
Conclusion: An evidence-based formal national Dementia Awareness Campaign is now possible. A multi-pronged educational approach is needed for clinicians, charities and society at large.

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21
WFN15-0589
Dementia 1

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