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# Dementia 2

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**WFN15-1092**
**Dementia 2**
**Randomized, placebo-controlled, phase 1b study of anti-beta-amyloid antibody aducanumab (biib037) in prodromal ad/mild ad dementia: Interim results by patient subgroup**

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**Background:** Aducanumab (BIIB037) is a human mAb against aggregated Aβ peptide being investigated as a disease-modifying AD treatment.
**Objective:** Present interim safety, Aβ reduction, and mini-mental state examination (MMSE) and Clinical Dementia Rating sum of boxes (CDR-sb) changes by disease stage and ApoE4 status.
**Methods:** In this multicenter, double-blind, placebo-controlled, multiple-dose study (PRIME; NCT01677572), patients (age 50-90 years) had positive florbetapir (Amyvid) PET scan and met clinical criteria for prodromal AD or mild AD dementia. Necessary patient/IRB approvals were obtained. Patients received aducanumab or placebo once every 4 weeks for 52 weeks in 7 arms stratified by ApoE4 status. Interim analyses include results to Week 30 (all arms) and Week 54 (placebo, 1, 3, 10 mg/kg; data for 6 mg/kg not yet available).
**Results:** 165 patients were randomized and dosed with placebo, 1, 3, 6, or 10 mg/kg aducanumab (65% ApoE4 carriers; 41% had prodromal AD). Incidence (MRI-based) of the most common AE, amyloid-related imaging abnormalities (ARIA), was dose and ApoE4-status–dependent (ARIA-edema, ApoE4 carriers: 0%, 5%, 5%, 43%, 55%, for placebo, 1, 3, 6, 10 mg/kg aducanumab, respectively; ApoE4 non-carriers: 0%, 0%, 9%, 11%, 17%). Dose- and time-dependent brain Aβ reductions (standard uptake value ratio change) were observed, which were consistent across mild/prodromal and ApoE4 carrier/non-carrier subgroups. Dose-dependent slowing of MMSE and CDR-sb decline was observed at 1 year across disease stages/ApoE4 genotypes.
**Conclusions:** Dose- and ApoE4-dependent ARIA was the main safety finding. Aducanumab reduced Aβ plaques and slowed MMSE/CDR-sb decline across clinical stages and ApoE genotypes.

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**WFN15-1153**
**Dementia 2**
**Tau oligomer antibodies as potential therapeutics for parkinson's and other synucleinopathies**

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**Background:** Parkinson's disease (PD) is the second most common neurodegenerative disorder and with no effective treatments or preventative measures, its prevalence is growing. PD is characterized by cognitive and movement symptoms associated with a loss of dopaminergic neurons, synaptic dysfunction, and the presence of Lewy bodies comprised of α-synuclein. Evidence shows that smaller aggregates, oligomers, may be more toxic. Moreover, we have found that oligomeric α-synuclein coexists with tau protein in disease in a possible toxic synergy, implicating tau oligomers as a therapeutic target for synucleinopathies.
**Objective:** Evaluate the efficacy of a tau oligomer-specific antibody (TOMA) in a synucleinopathy mouse model.
**Materials and methods:** We treated seven-month-old mice overexpressing A53T mutated α-synuclein intravenously with either TOMA, an antibody for all forms of tau—Tau-13, or a control IgG and wild-type mice with saline. We tested mice on a battery of behavioral tasks assessing memory and motor function. Following testing, half of the mice were sacrificed and tissue was collected for biochemical and immunological analysis. Remaining mice were aged to 12 months and tested again.
**Results:** A53T mice treated with TOMA were protected from cognitive and motor deficits, while treating with Tau-13 appeared to exacerbate the phenotype. We found decreased levels of toxic tau oligomers in the brains of TOMA-treated mice. Importantly, levels of dopamine were elevated in TOMA-treated mice, as well as the synaptic protein, Synapsin I.
**Conclusion:** Targeting tau oligomers is beneficial for a mouse model of synucleinopathy and may be a viable strategy for treating PD.

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**WFN15-1177**
**Dementia 2**
**Svedem, the Swedish dementia registry – A tool for improving the quality of diagnostics, treatment and care**

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**Background:** In Sweden, there are over 100 quality registries. There was a need to initiate a dementia registry for both memory clinica and primary care units.

0022-510X/$ – see front matter.