Table
Baseline demographics and clinical characteristics of participants and pre- to post-intervention change (mean [SD]).

	Baseline characteristics (n=8)	Mean change from baseline at 14 weeks (n=7)	*P*-value*
Age, years	71.9 (±5.4)	N/A	N/A
Gender, f/m	6/2	N/A	N/A
MMSE #	24.3 (±4.4)	-1.4 (±3.3)	0.3
SDMT 90 sec #	17.4 (±4.0)	-3.1 (±3.5)	0.06
SDMT 120 sec #	22.9 (±5.3)	-4.4 (±4.1)	0.03
QoL-AD patient #	37.4 (±5.7)	0.4 (±2.9)	0.7
QoL-AD proxy #	39.3 (±5.7)	-3.4 (±1.7)	0.002
ADCS-ADL #	69.6 (±5.5)	-3.1 (±5.7)	0.19
GDS-15 §	3.1 (±2.2)	-1 (±1)	0.04

*Paired-samples t-test
Higher score=better function, § Lower score=better function

were included in the study (see Table). Attendance (90 %, (70-100 %)) and retention (87,5 %) rates were high. Two patients experienced knee-pain, and two falls unrelated to the intervention occurred. Patients had fewer depressive symptoms after the intervention (mean change on GDS: -1, (±1); $P = 0.04$). Proxy-rated QoL (-3.4 (±1.7); $P = 0.002$) decreased whereas patient-rated QoL did not (0.4 (±2.9); $P = 0.7$). SDMT score (-4.4 (±4.1);$P = 0.03$)) decreased indicating a worsening of mental speed and processing. PiB retention increased in all patients (pre-test: 2.60 (±0.3); post-test: 2.71 (±0.31); $P = 0.005$), Figure. Patients and caregivers were positive towards the intervention. **Conclusions:** It is feasible and safe to carry out a study of moderate intensity aerobic exercise in patients with mild to moderate AD, and the intervention may decrease depressive symptoms. Decline in cognitive function and increase in PiB-retention also observed is compatible with the natural history of AD. Our uncontrolled study was not designed to examine the effectiveness of aerobic exercise which must be evaluated in a large-scale randomized controlled trial.

P4-231 A NOVEL APPROACH FOR LOWERING MULTIPLE TARGETS IN ALZHEIMER'S DISEASE

Lina Adwan, Nasser Zawia, *University of Rhode Island, Kingston, Rhode Island, United States.*

Background: Due to the increase in life expectancy and the absence of a cure for Alzheimer's disease (AD), the number of cases with this debilitating disorder is predicted to triple over the next 40 years to 106.8 million worldwide and 13.2 million in the US, with an annual incidence that will be close to 1 million cases per year in 2050. Current therapeutic approaches merely target the symptoms of the disease but not its core pathology, and fail to alter the devastating course of AD that ultimately leads to terminal memory dysfunction and death. Considering the poor performance of existing drugs, there is an increasing need to develop alternative therapies that modify the disease process. The amyloid beta (Aβ) plaques and tau neurofibrillary tangles are the characteristic deposits found in the AD brain. Aβ, which is the main component of AD plaques, is derived from the amyloid beta precursor protein (APP) following sequential enzymatic cleavage by beta site APP cleaving enzyme (BACE) and γ-secretase. Tau belongs to a family of microtubule associated proteins (MAPs) that promote microtubule assembly. When hyperphosphorylated, tau loses its normal function and becomes prone to form aggregates, and increased hyperphosphorylated tau levels in the brain correlate with memory impairment. We have found an agent that targets both the amyloid and tau neurofibrillary pathways of AD through a unique transcription driven mechanism. **Methods:** Mice were administered control or two different treatment doses everyday for one month by oral gavage. We used real time PCR, Western blot analysis and enzyme-linked immunosorbent assay (ELISA) for determining mRNA and protein levels amongst control and treatment brain tissue, as well as a highly sensitive activity kit to measure BACE1 enzyme activity. **Results:** Our results showed that both tau mRNA and protein levels were lowered following treatment in mice. BACE1 activity and levels were also decreased with treatment as well as APP mRNA and protein, and Aβ levels. **Conclusions:** Thus we present a drug candidate that inhibits the transcription of multiple major intermediates in AD pathology and uncovers a new mechanism based approach for targeting AD.

P4-232 NITRIC OXIDE MEDIATES AGMATINE-INDUCED IMPROVEMENTS IN MEMORY

Maryam Moosavi, Atefeh Khajeh, Golnaz Yadollahi Khales, *Shiraz University of Medical Sciences, Shiraz, Iran.*

Background: Agmatine (4-aminobutyl guanidine) is one of the metabolites of L-arginine. It is synthesized by arginine decarboxylase (ADC) and hydrolysed by agmatinase. Agmatine is widely distributed in the brain and its concentration is similar to the other neurotransmitters concentrations. Because agmatine is synthesized in the brain, stored in synaptic vesicles, accumulated by uptake, released by depolarization and inactivated by agmatinase, it is considered to be a putative neurotransmitter. It is reported recently that agmatine improves memory but its mechanism of action is not elucidated yet. Agmatine is suggested to modulate nitric oxide synthesis by affecting nitric oxide synthase (NOS); it inhibits neuronal (nNOS) and inducible (iNOS) NOS, while stimulates endothelial (eNOS) type and elevates nitric oxide (NO) and cyclic GMP levels. NO is the key link between NMDA-mediated increases in cytoplasmic Ca 2+, LTP and synaptic plasticity which are essential for memory formation. Then the aim of this study was to assess if nitric oxide synthesis inhibition prevents agmatine improving effect on memory. **Methods:** Adult male Sprague-Dawely rats weighing 200-300 g were trained in a single session consisting of 8 trials. The probe test was done 24 hours later to assess memory retention. Saline, agmatine (40 mg/kg) and/or L-NAME (3 mg/kg) was administered immediately after training. While agmatine improved animals' performance in probe trial, L-NAME prevented that improving effect. **Results:** The results showed that L-NAME (the inhibitor of nitric oxide synthesis) prevents agmatine-induced improving effect on memory. **Conclusions:** It seems that nitric oxide is involved in agmatine-induced memory improvement.

P4-233 DONEPEZIL IN THE TREATMENT OF ALZHEIMER'S DISEASE: RESULTS FROM A ROUTINE CLINICAL PRACTICE SETTING

Said Ramdane, *Private Office of Neurology, Algerian Society of Neurology and Clinical Neurophysiology, Skikda, Algeria.*

Background: Clinical experience provides useful complement to the evidence available from clinical trials. We evaluated safety and effectiveness of Donepezil in a sample of elderly patients with Alzheimer's disease, in routine clinical practice. **Methods:** This was a retrospective case note study involving patients with mild-moderate Alzheimer's disease, followed in a clinical ambulatory of neurology (2008-2011), recruited in community elderly (Skikda-Algeria). Among the patients who matched the prescribing recommendations for donepezil, 47 patients (59% female; mean ±SD age, 75.6±8.6 years) completed 12 months donepezil treatment (5 to10 mg/day). Efficacy and safety assessments were carried out every 3 months. Efficacy was assessed by the Mini-Mental State Examination (MMSE), Neuropsychiatric Inventory Questionnaire (NPI-Q), Katz Index of Independence in Activities of Daily Living