

Aims To describe the relationship between the personality changes and pathological cerebro-spinal fluid (CSF) biomarkers.

Method One hundred and ten subjects, of whom 57 patients with mild cognitive impairment (MCI), 9 subjects with mild dementia, and 44 healthy controls had an extensive medical and neuropsychological examination as well as lumbar puncture to evaluate concentrations of CSF biomarkers of AD pathology [amyloid- β_{1-42} ($A\beta_{1-42}$), phosphorylated tau (ptau-181), and total-tau (tau)]. The proxies of the participants completed the Revised NEO Personality Inventory (NEO-PI-R) to assess subjects' personality at the time being and 5 years retrospectively.

Results In a hierarchical multivariate regression analysis, including age, gender, education, Mini Mental State Examination (MMSE), and APOE ϵ 4 status, lower $A\beta_{1-42}$ concentrations in CSF were associated with increasing neuroticism, and decreasing extraversion and conscientiousness. Decreasing extraversion, openness to experience and conscientiousness were associated with higher tau/ $A\beta_{1-42}$ ratio, and higher ptau-181/ $A\beta_{1-42}$ ratio was related to decreasing extraversion. Personality changes in the domain of agreeableness did not yield any significant effect as a predictor on any of CSF biomarkers.

Conclusions Our findings suggest that early and specific changes in personality traits are associated with cerebral AD pathology, in particular with amyloid pathology, and may serve as clinical signs to consider when evaluating MCI and mild dementia.

Disclosure of interest The authors have not supplied their declaration of competing interest.

<http://dx.doi.org/10.1016/j.eurpsy.2016.01.043>

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Diuretic medication use reduces incident dementia risk: A meta-analysis of prospective studies

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Introduction Numerous observational studies suggest that blood pressure management with antihypertensive drugs may be effective in reducing dementia risk.

Objective To quantify dementia risk in relation to diuretic medication use.

Methods Electronic databases were searched until June 2015. Eligibility criteria: population, adults without dementia at baseline from primary care, community cohort, residential/institutionalized or randomized controlled trial (RCT); exposure, diuretic medication; comparison, no diuretic medication, other or no antihypertensive medication, placebo-control; outcome, incident dementia in accordance with standardized criteria. Adjusted hazard ratios (HR) with 95% confidence intervals (CI) were pooled in fixed-effects models with RevMan 5.3. The overall quality and strength of evidence was rated with GRADE criteria.

Results Fifteen articles were eligible comprising a pooled sample of 52,599 persons and 3444 incident dementia cases (median age 76.1 years, 40% male) with a median follow-up of 6.1 years. Diuretic use was associated with 17% reduction in dementia risk (HR 0.83; 95% CI 0.75 to 0.90) and a 21% reduction in Alzheimer's disease risk (HR 0.79; 95% CI 0.68 to 0.93). GRADE was rated as moderate. Risk estimates were consistent comparing monotherapy versus combination therapy, study design and follow-up. Meta-regression did not suggest that age, gender, systolic blood pressure, attrition, mortality rate, education, cognitive function, stroke, Apolipoprotein E allele, heart failure or diabetes altered the primary results.

Conclusions Diuretic medication was associated with a consistent reduction in dementia and Alzheimer's disease risk and the absence of heterogeneity points to the generalizability of these findings.

Disclosure of interest The authors have not supplied their declaration of competing interest.

<http://dx.doi.org/10.1016/j.eurpsy.2016.01.044>

Mental health policies

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Changes in prescribing patterns of benzodiazepines after training of general practitioners

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Introduction Benzodiazepines are the most utilized anxiolytic and hypnotic drugs. The high consumption of benzodiazepines has been a concern due to reported side effects of long-term use and dependence. Portugal has the highest benzodiazepine utilization in Europe.

Objectives To analyze the change in general practitioners' (GPs) benzodiazepine prescription pattern after an intervention period.

Methods An educational session was delivered to a group of intervened GPs. The benzodiazepine prescription pattern of intervened group was compared to the pattern of a non-intervened matched group from the same region, and of another non-intervened matched group from a different region. The research time frame was 12 months before and after intervention. The analysis of the prescription trends used the defined daily dose (DDD) and defined daily dose per 1000 patients per day (DHD) methodology. The statistical methods consisted of segmented regression analysis.

Results There was a decrease in benzodiazepine prescription pattern of intervened GPs after intervention ($P=0.005$). There was also a decrease in benzodiazepine prescription pattern for the non-intervened group from the same region ($P=0.037$) and for the non-intervened group from a different region ($P=0.010$). Concerning an analysis by gender, female gender prescribed a higher amount of benzodiazepines. The intervened female gender prescribers presented the highest decrease in prescription trend after intervention ($P=0.008$).

Conclusions Intervention was effective in reducing benzodiazepine prescription after intervention. It demonstrates that a single intervention has a positive impact on improving prescription trends. The replication of this intervention might be an opportunity for changing the worrying benzodiazepine utilization in Portugal.

Disclosure of interest The authors have not supplied their declaration of competing interest.

<http://dx.doi.org/10.1016/j.eurpsy.2016.01.045>