development of experimental autoimmune encephalomyelitis (EAE) in rats and to elucidate its underlying mechanisms. **Methods:** EAE model was induced by immunization of adult female Lewis rats with purified guinea-pig myelin basic protein (MBP)68-86. CIG and EF were administrated intragastrically once a day after immunization until day 21 post immunization (p.i.). Histopathological staining, enzyme-linked immunosorbent assay (ELISA), biochemical methods and western blotting approaches were used to evaluate the disease incidence and severity, neuroinflammatory and neurotrophic response in the central nervous system (CNS). **Results:** CIG or EF intragastrical administration significantly reduced clinical score of neurological deficit in EAE rats; alleviated demyelination and inflammatory infiltration; and inhibited glias activation, nuclear transcription factor (NF-κB) expression in the spinal cord of EAE rats. Treatment with CIG or EF also enhanced neurotrophic factors such as nerve growth factor (NGF) or brain-derived nerve factor (BDNF) expression, increased the number of oligodendrocytes and protected the ultrastructure of myelin sheaths and axons in the spinal cord of EAE rats. **Conclusions:** Our results showed that CIG and EF could inhibit the development of MBP-induced EAE in rats and our findings suggest that traditional Chinese medicine with reinforcing kidney activity may be useful for the treatment of multiple sclerosis. This effect involved reducing neuroinflammation and enhancing myelination and neurotrophins.

P3-417 **TARGETING ACE—AN ENZYME THAT CONTROLS BLOOD PRESSURE—TO MYELOMONOCYTES PREVENTS ALZHEIMER'S-LIKE PATHOLOGY AND COGNITIVE DECLINE**

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Background: Cognitive decline in Alzheimer's disease (AD) patients is associated with elevated brain levels of amyloid β-protein (Aβ), particularly neurotoxic Aβ 1-42. Studies from our group and others indicate a fundamental role for myelomonocytes in facilitating Aβ-plaque clearance and limiting cognitive decline. Angiotensin-converting enzyme (ACE) degrades neurotoxic Aβ 1-42 and mice overexpressing ACE in myelomonocytes demonstrate enhanced innate immune responses. **Methods:** To assess effects of ACE 10 on AD, w e crossed APP SWE/PS1 ΔE9 transgenic (AD +) mouse strain with ACE 10 mice that overexpress ACE under the c-fms promoter, directing high expression of ACE to myelomonocytic lineage cells, such as monocytes, macrophages and microglia. All mice were on a C57BL/6 background and the different ACE genotypes had no effects on blood pressure or on amyloid precursor protein (APP) expression levels and downstream processing products. **Results:** Evaluation of brains from AD + mice with one or two ACE 10 alleles demonstrated a drastic reduction in cerebral Aβ levels, plaque burden, and astrogliosis. At 7 and 13 months, both soluble and insoluble brain Aβ 1-42 levels were significantly reduced. Plaque burden was reduced by as much as 79% (7 months) and 48% (13 months). Astrogliosis was reduced by 49-57% (7 months) and 50% (13 months). Importantly, inhibition of ACE-catalytic domains by ramipril eliminated the observed benefits and increased Aβ levels as compared to the ACE-independent vasodilator hydralazine. Although ACE-overexpressing microglia in primary culture had increased pro-inflammatory IL-1 β and TNF α cytokine secretion in response to LPS, there was less overall brain inflammation in AD + ACE 10/10 mice, which was consistent with reduced AD pathology. The infiltrating ACE-overexpressing macrophages were more abundant surrounding and engulfing cerebral Aβ plaque. Endothelial ACE expression was found critical for perivascular Aβ deposition. Strikingly, at 11 and 12 months, AD + ACE 10/WT and AD + ACE 10/10 mice were essentially equivalent to non-AD mice in cognitive ability as assessed by Barnes maze tests. **Conclusions:** Our data demonstrate that ACE 10 genotype leads to a remarkable attenuation of AD-like progression in murine models. Results from these studies demonstrate that an enhanced immune response, coupled with increased myelomonocytic expression of catalytically active ACE, prevents the pathology and cognitive decline associated with AD.

P3-418 **AT-RISK OFFSPRING AND DEMENTIA PREVENTION: A DISCOURSE ANALYTIC APPROACH**

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Background: Successful late-onset dementia prevention studies will require the cooperation of large numbers of at-risk individuals. Factors determining differences in participation in long-term trials need investigation. We aimed to inform successful recruitment to prevention trials by applying discourse analytic methods to interview data obtained from at-risk adult offspring in order to illuminate aspects that may not be captured using traditional psychometric measures or some of the more commonly used qualitative methods. **Methods:** Semi-structured interviews focusing on views of personal risk in adult offspring of community-dwelling people with early stage late onset dementia were transcribed in full and analysed using discourse analytic methods. As participants had not been asked their views on dementia prevention in the interview a 6 item lickert-type telephone questionnaire on dementia risk and prevention was developed and completed by the same offspring and other siblings (n21). **Results:** Offspring had not previously been asked about risk and many had never discussed it with family members. Most participants initially denied they had any concerns around their own risk. However, using the space and encouragement of the interview situation participants gained confidence to voice their concerns. Discourse analysis illuminated how participants formulate their ideas about risk and often do construct their own (erroneous) risk estimations. The questionnaire data identified that 20/21 people would want to participate in dementia prevention studies. Only 2/21 people would not want to know their risk estimate (1 would participate without knowing their risk). **Conclusions:** We need to learn more about how people formulate risk conversationally and examine the ways their versions of reality influence behaviours in terms of participation in dementia prevention and risk reduction interventions. This study shows that people who are at higher risk of developing dementia want to be told their risk in terms they understand and they want to be invited to participate in long-term studies.

P3-419 **COHORT EFFECTS IN THE PREVALENCE OF DEMENTIA AND SURVIVAL PATTERNS IN NORDANSTIG, A RURAL COHORT PROJECT (SNAC-N) IN NORTHERN SWEDEN**

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Background: Time trends of dementia are of great interest due to health trends and changes in risk factor patterns. Studies from rural areas are rare. Thus the aim of this project was to analyse trends in the prevalence and survival patterns of dementia in a rural area in Northern Sweden. **Methods:** Overall dementia prevalence rate and mortality during six years in The Nordanstig project (NP) 1995-1998 (N=303) and in the Swedish National Study on Aging and Care in Nordanstig (SNAC-N) 2001-2003 (N=407) among people 78 years and older was analysed. Logistic regression models was used for the analysis of prevalence while Chi-square tests and survival analyses was used for the analysis of mortality patterns. **Results:** The crude dementia prevalence was 21.8% in NP and 17.4% in SNAC-N (p=0.09). The odds ratio (adjusted for age and education) for having dementia was 0.69 (95% confidence interval 0.46-1.02) in SNAC-N (with NP as reference). For men it was 0.45 OR (0,23-0.88), and 0.87 (0.53-1.44) for women. Having dementia was a risk for being dead after 6 years follow-up (both cohorts) (OR 7.57 (4.37-13.3) as well as male gender (OR 1.49 (1.05-2.10). **Conclusions:** The prevalence of dementia has decreased in men in a rural area in Northern Sweden. There is an interaction between survival patterns, gender, education and other risk factors that needs to be explored more profoundly.