

Adult-onset epilepsy in presymptomatic Alzheimer's disease: a retrospective study

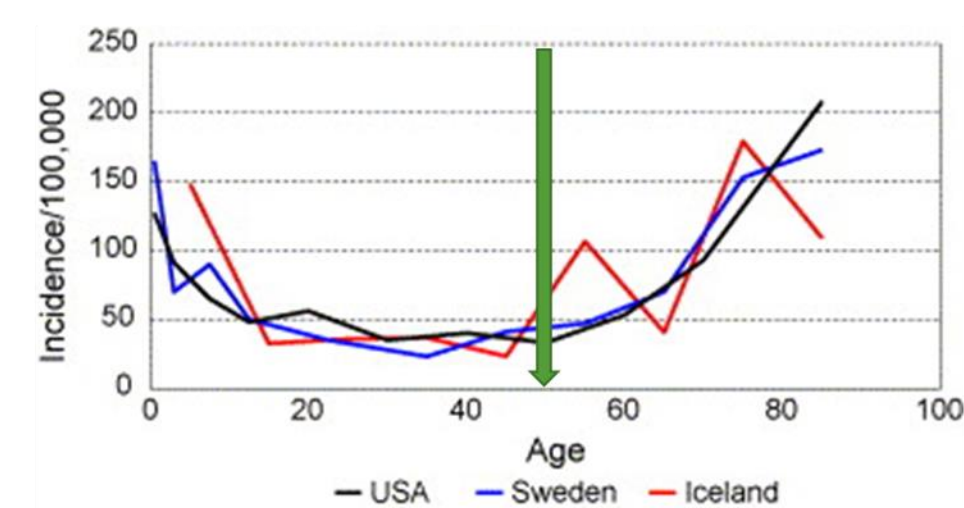
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PREVALENCE OF EPILEPSY IN THE ELDERLY

INCREASE WITH AGE



Hauser et al., 1993, Sidenvall et al., 1993, Forsgren et al., 1996 and Olafsson et al., 2005

ACCUMULATION OF BRAIN DAMAGE

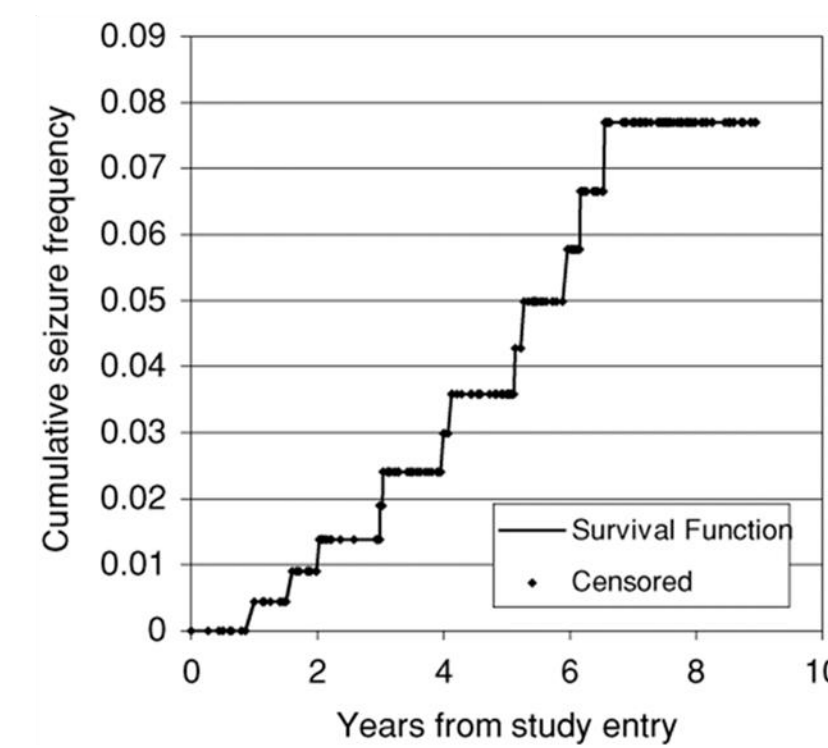


- Cerebrovascular disease
- Tumor
- Trauma
- Medications
- Metabolic and toxic conditions

ETIOLOGY UNCLEAR IN 1/3 OF ELDERLY PATIENTS

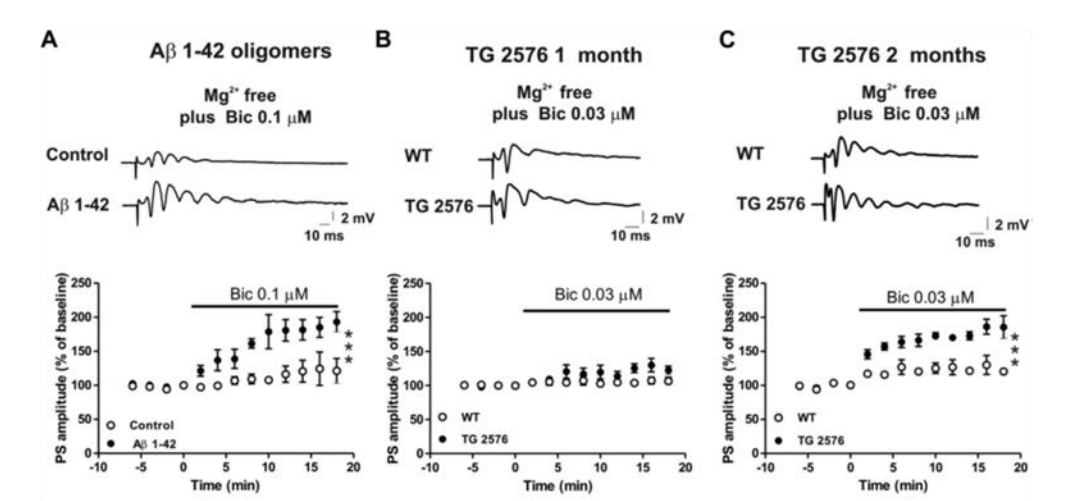
NEURODEGENERATIVE DISEASES AND EPILEPSY

EPILEPSY IS INCREASED IN AD



Epilepsia. 2006 May;47(5):867-72

ABETA INCREASES EXCITATORY EPILEPTIC-LIKE ACTIVITY



Neurobiol Aging. 2016 Dec;48:161-171

CHARACTERISTICS OF THE STUDY

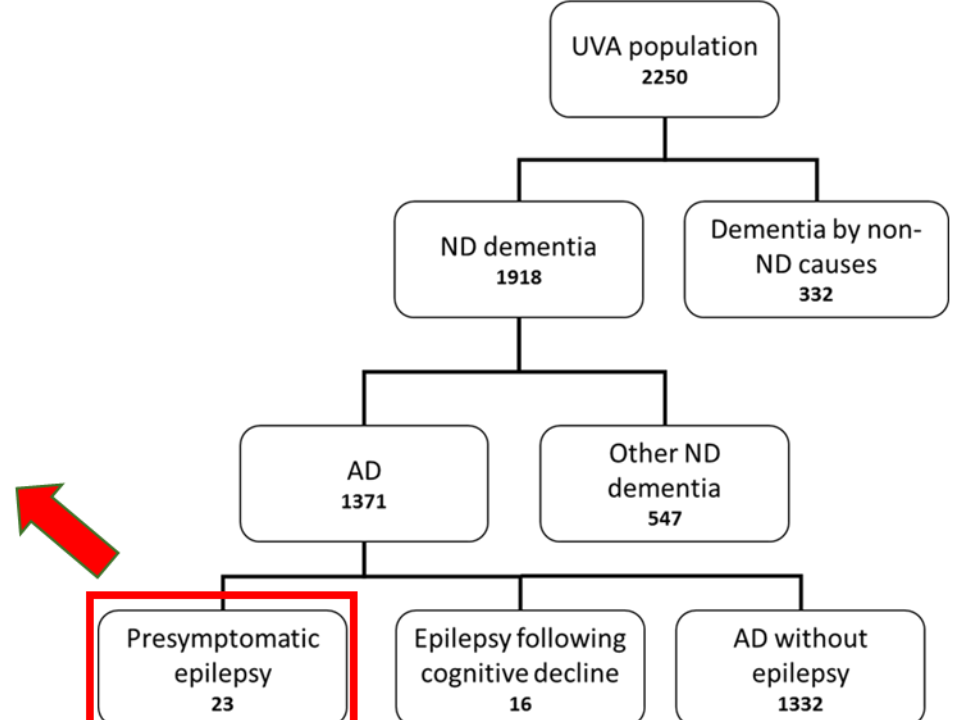
- **AIM:** increased prevalence of epilepsy in presymptomatic AD?
- **Design:** retrospective, observational study
- **Patient recruitment:**
 - AD from the UVA Center of the San Gerardo Hospital, Monza (Italy)
 - From May 2000 to July 2016
- **Data collection (EPS-AD):**
 - Adult-onset seizures (>55 yo)
 - Before cognitive symptoms
 - Unknown cause (brain CT/MRI negative)
- **Comparison with RP of the province of Lecco, Northern Italy**

STUDY POPULATION

ADULT-ONSET EPILEPSY IN PRESYMPTOMATIC AD

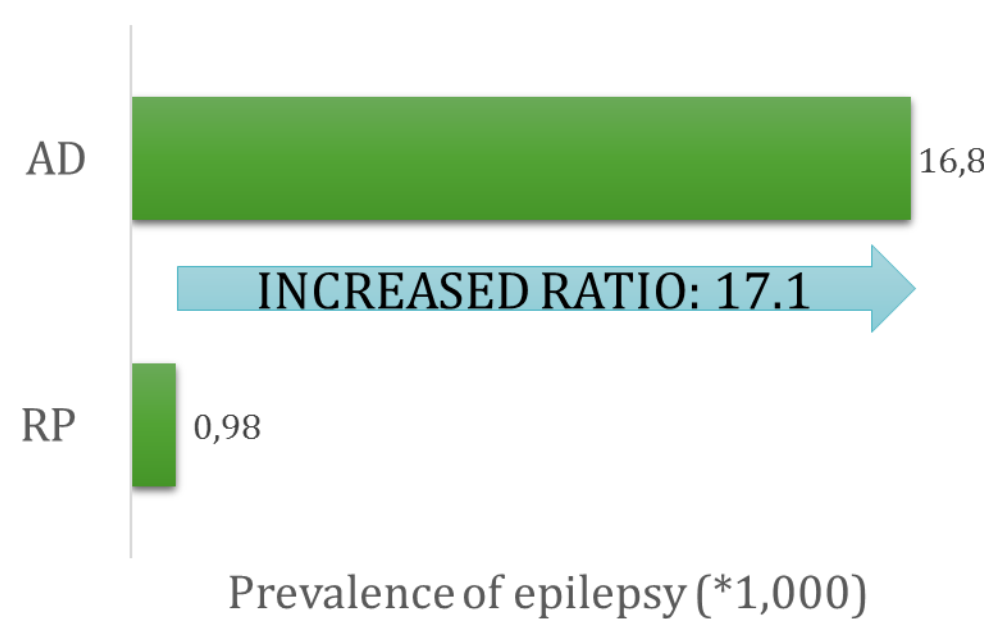
Number of cases	23
Gender (F/M)	16/7
Age of first seizure (mean ± SD)	68 ± 13
Age of cognitive decline (mean ± SD)	71 ± 10
Prevalence of epilepsy	16.8*1000
Years of education (mean ± SD)	6 ± 2
Type of seizure	
Generalized	11
Partial	5
Undetermined	7

FLOWCHART OF PATIENT RECRUITMENT



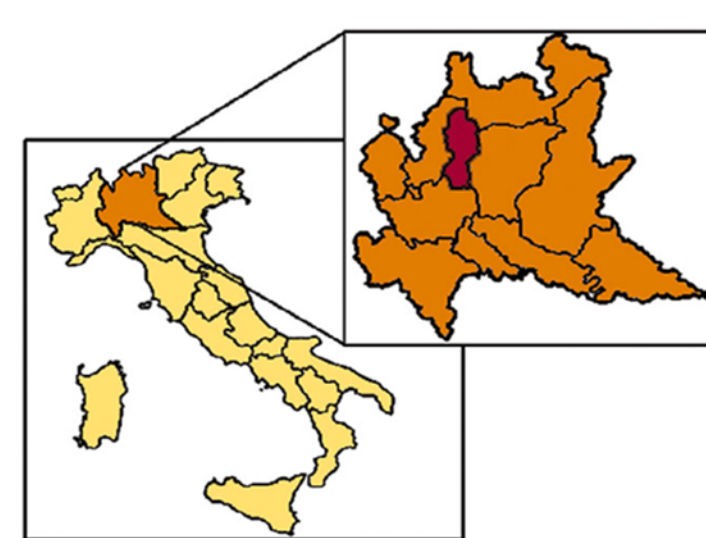
PREVALENCE OF EPILEPSY

RISK OF EPILEPSY IN PRESYMPTOMATIC AD



95% CI: 10.3 – 28.3

REFERENCE POPULATION

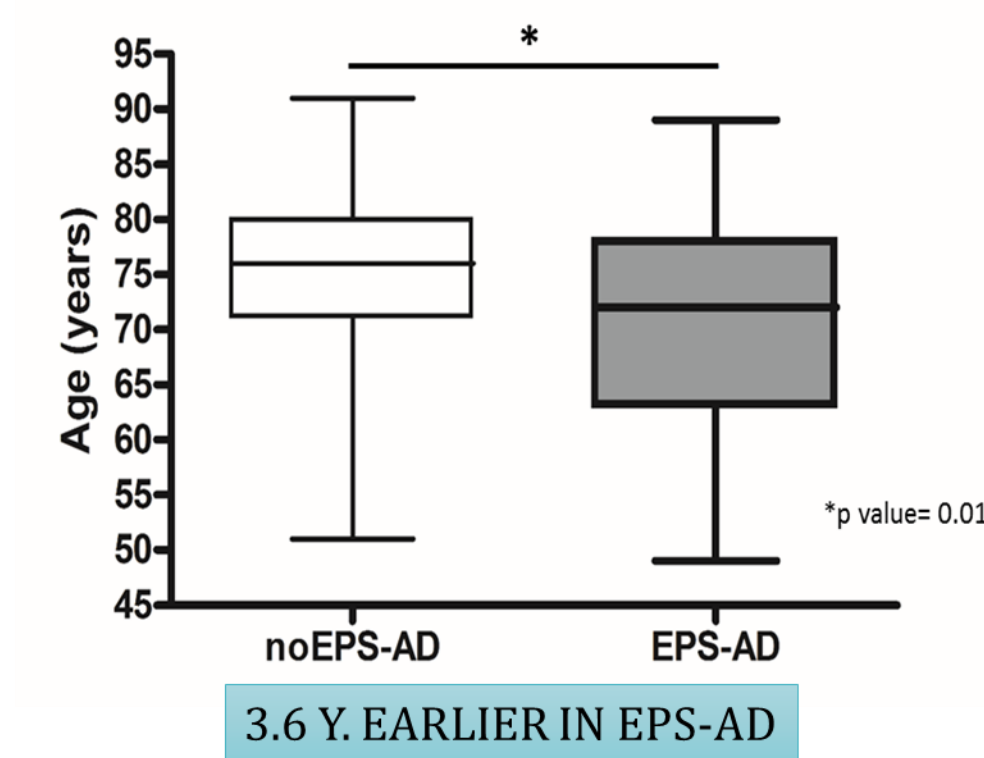


PROVINCE OF LECCO globally 42,739 individuals

Epilepsy Behav. 2016 Feb;55:30-7

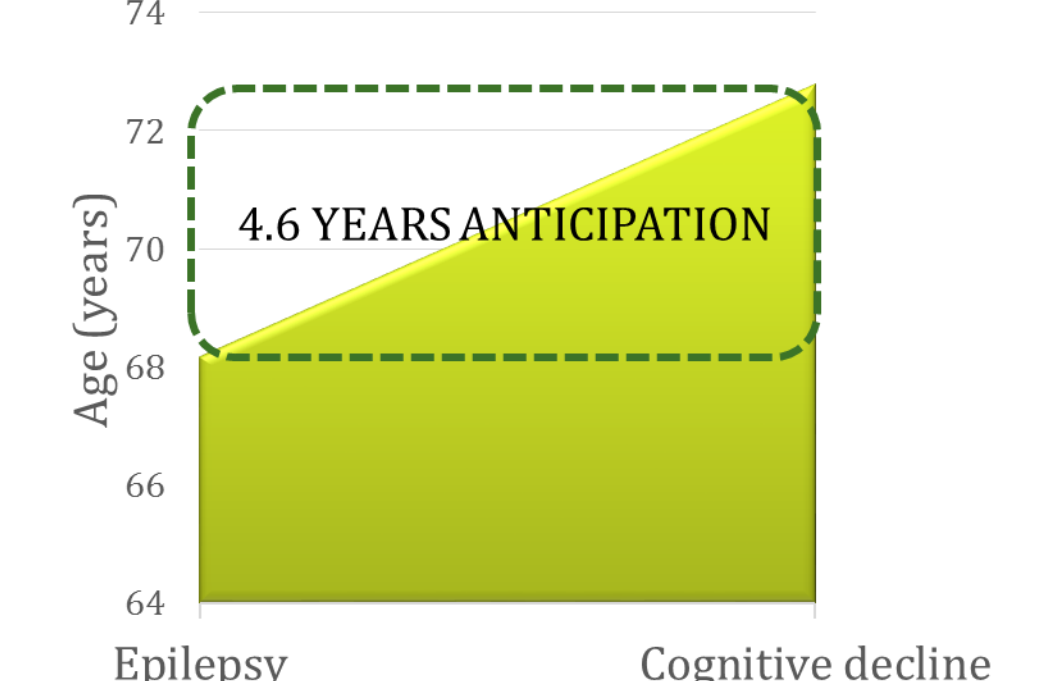
ONSET OF COGNITIVE DECLINE AND EPILEPSY

COGNITIVE DECLINE



3.6 Y. EARLIER IN EPS-AD

SEIZURES PRECEDE SYMPTOMS OF COGNITIVE DECLINE

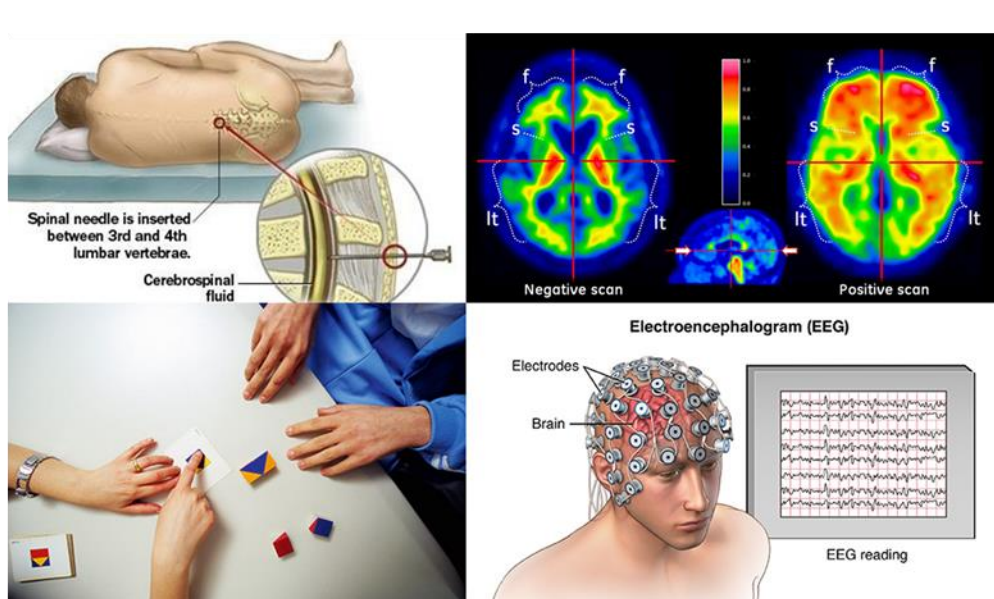


(median 2.0, IQR 0.5-6.0, range 0.5-29.0)

Graph showing that in EPS-AD, symptoms of cognitive decline occur 3.6 years earlier compared to noEPS-AD (p value= 0.01).

IMPLICATIONS AND PERSPECTIVES

EPILEPSY: EARLY BIOMARKER OF DEMENTIA?



TREATMENT OF PRESYMPTOMATIC AD



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