

Antiseizure medication within 48h after the first seizure provides better seizure control than later treatment

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Introduction

- Large randomized controlled studies: worse outcome when epilepsy patients presenting with their first seizure reported prior untreated events²
- Difference in prognosis persists over several years despite antiepileptic treatment^{1,2}

Is there a crucial time window for treatment after the first seizure in new-onset epilepsy?

Methods

- 487 FS patients retrospectively enrolled (2010 – 2017)
- Comprehensive workup in all patients: CT and MRI, EEG, specialized consultation, and if necessary LT-EEG
- follow-up of 5 years
- Survival analysis on relapses after ASM introduction → Cox proportional hazard models
 - Models controlled for several variables (age, type of epilepsy, sex, presence of a tumor, prior events and events waiting for ASM, treatment)

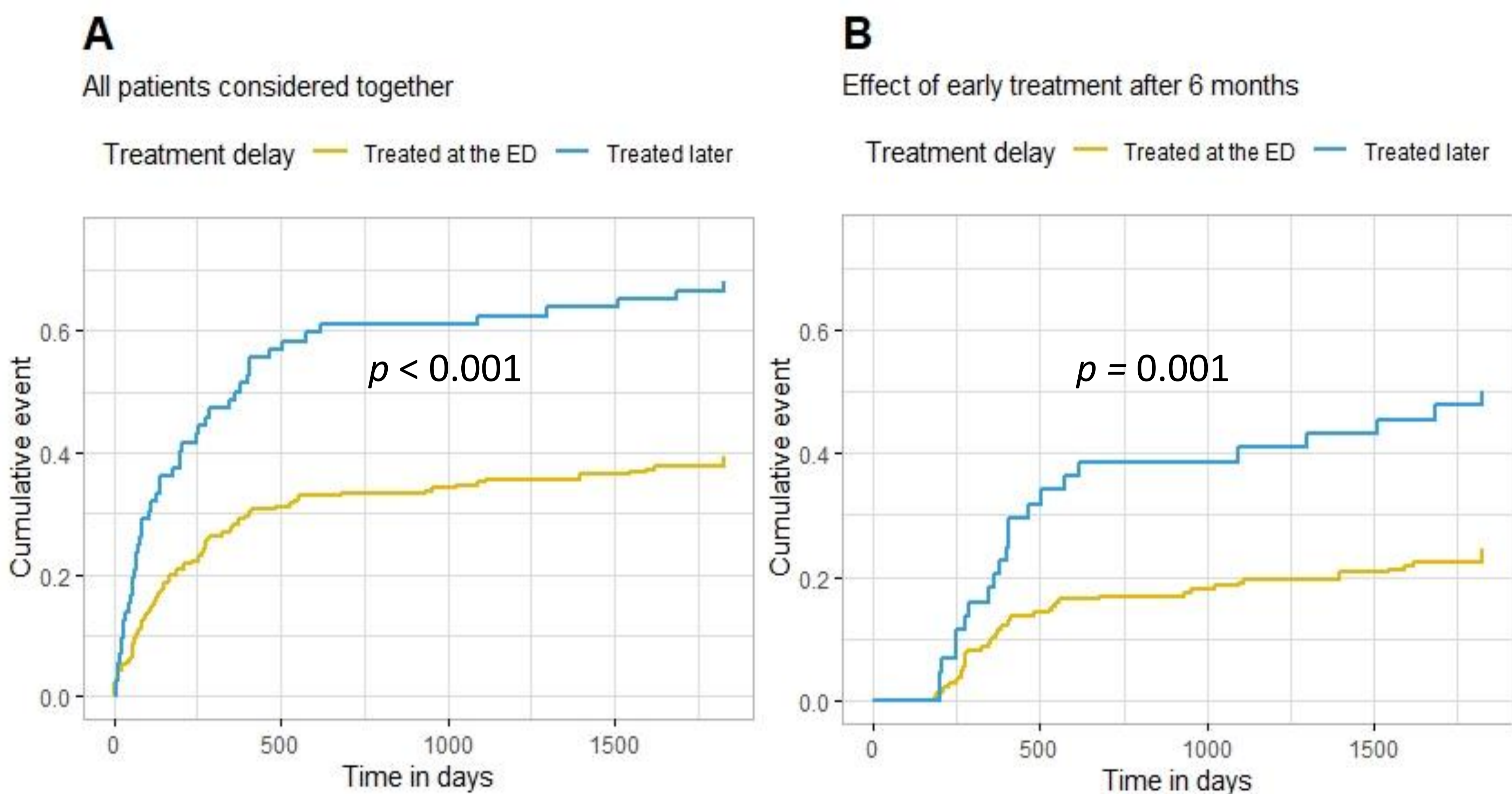


Table 1: descriptive statistics.

	Treatment within 48 h	Treatment after 48 h	p-value Chi Square
N	231	72	
M/F	135/96	44/28	0.791
Mean age (s.d.)	53.7 (20.8)	47.5 (22.5)	0.041
True first seizure/Possible prior seizures	212/19	67/5	0.919
Epilepsy types:			
Focal lesional epilepsy	200	34	<0.001
Focal non-lesional epilepsy	18	26	
Genetic (idiopathic) generalized epilepsy	13	12	
Types of brain lesion:			
Vascular	94	14	<0.001
Brain tumors	53	4	
Atrophy	15	3	
Trauma	19	2	
Developmental malformations	7	4	
Other	15	11	

Fig 1: Kaplan-Meier curve of relapses over 5 years (1825 days) after the first seizure (A) for all patients and (B) for fully treated patients, starting 6 months after the first seizure.

Results

- Patients treated within 48h → Higher chances to remain seizure-free over the next 5 years (Fig 1A; $p < 0.001$) compared to patients treated later
- If only considering fully treated patients at 6 months, the difference remains significant ($p = 0.001$; Fig 1B)
- History of anterior events ($p < 0.001$); male sex ($p = 0.043$); younger age ($p = 0.043$) and focal epilepsy ($p < 0.001$) are risk factors
- No difference of drug adherence or titration speed between both groups

Conclusions

- ❑ Patients with NOE benefit from expedite work-up and treatment initiation within the first 48h following the first seizure → Better prognosis over the next 5 years
- ❑ We hypothesize that the first event triggers a neuroinflammatory response which is stopped or slowed if treated with antiseizure medication³
- ❑ Consequently, waiting for a second seizure to treat leads to worsened prognosis
- ❑ **First-seizure units** activated upon arrival at the ED improves the prognosis significantly

References

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