OBJECTIVE
We evaluated CSF biomarkers involved in inflammatory and neurodegenerative processes (beta-amyloid and tau proteins) in a population of narcoleptic drug-naïve patients ranging from early to late phases of the disease in order to determine whether the expression of these biomarkers changes in narcolepsy over time.

METHODS
We analyzed a population of narcoleptic drug-naïve patients compared to a sample of healthy controls. Patients and controls underwent lumbar puncture for CSF beta-amyloid$_{1-42}$(Aβ$_{1-42}$), total tau (t-tau) and phosphorylated-tau (p-tau) levels assessment. Moreover, based on the estimated median disease duration of the whole group, narcoleptic patients were divided in two subgroups: patients with a short disease duration (SdN, <5 years) and patients with a long disease duration (LdN, >5 years).

RESULTS
We found significant lower CSF Aβ$_{1-42}$ levels in the whole narcolepsy group with respect to controls. Taking into account the patients subgroups, we documented reduced CSF Aβ$_{1-42}$ levels in SdN compared to both LdN and controls. Even LdN patients showed lower CSF Aβ$_{1-42}$ levels with respect to controls. Moreover, we documented higher CSF p-tau levels in LdN patients compared to both SdN and controls. Finally, a significant positive correlation between CSF Aβ$_{1-42}$ levels and disease duration was evident.

CONCLUSIONS
We hypothesize that beta-amyloid metabolism and cascade may be impaired in narcolepsy not only at the onset, but also along with the disease course, although they show a compensatory profile over time. Concurrently, also CSF biomarkers of neuron morphology and structure impairment (p-tau) appear to be altered in narcolepsy patients featured by a long disease duration. However, the mechanism underlying beta-amyloid and tau metabolisms impairment during narcolepsy remains still unclear and deserves to be better elucidated.