

observed in 19(36.5%). When analyzing its development, MTS was clearly more frequent in brain lesions affecting the temporal lobe ( $p=0.0001$ ), with some etiologies such a remote cerebrovascular disease/brain injury ( $p=0.001$ ) or an acute CNS infection ( $p=0.014$ ), with higher EMSE scores ( $p=0.011$ ), and when LPDs were present ( $p=0.002$ ); furthermore, we observed a tendency in older patients ( $p=0.089$ ). After a multivariate analysis, the factors predicting the development of MTS were the presence of a lesion in temporal lobe ( $p=0.003$ ), and specific etiologies: a remote cerebrovascular lesion or traumatic brain injury ( $p=0.002$ ) and an acute CNS infection ( $p=0.031$ ). In 43 patients, an acute MRI was also performed, 19 (44.2%) showed changes related to SE in DWR and 30 (69.8%) in T2; when MRI acute changes were included in regression, the presence of a lesion in temporal lobe ( $p=0.046$ ) and a remote vascular or traumatic lesion ( $p=0.016$ ) remained as predictors of MTS, in addition to the finding of acute post-SE changes in DWR ( $p=0.091$ ).

**Conclusion:** In SE patients, the development of MTS was related with specific etiologies and the location of the brain insult.

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### Prolonged Seizures in Children

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**Background:** Prolonged seizures (PS) in children carry significant risk of morbidity and mortality. Previous work has predominantly focused on status epilepticus  $\geq 30$ min but a new ILAE definition has been produced following evidence that seizures  $\geq 5$ min are associated with negative outcomes. There has been increasing effort by clinicians and epilepsy specialist nurses to manage PS effectively through benzodiazepines, education and training. This study aims to provide population-based data on children presenting with PS and their outcomes.

**Methods:** All children presenting to accident and emergency (A+E) between 2011-2017 from a Scottish Children's hospital were identified (capture-recapture method with multiple datasets). Data was collated from electronic health records; including patient demographics, clinical characteristics, acute seizure management and outcomes. This data can be used to study long-term outcomes, including educational outcome, through national data linkage systems.

**Results:** There were 666 children (1234 seizure episodes). These accounted for 0.38% (95% CI (0.34-0.42%)) of A+E admissions. Yearly prevalence rate was 0.8 per 1000 children. The median age was 3.65 years (range 0-20 years) and 54% of children were male (95% CI (53.1-60.7%)). The median seizure duration was 10 minutes (range 5 to 195 minutes). PS incidence increased at the extremes of socioeconomic status and relationship with distance from A+E can be determined. Seizure duration, mortality and requirement for ventilatory support decreased compared to historical data. Data highlighted children with epilepsy and those in specialist education as two particularly at risk groups for recurrent prolonged seizures. There was a lower likelihood of hospital admission where buccal midazolam was administered.

**Conclusions:** Adverse outcomes have decreased and the use of buccal midazolam is promising. Identifying high-risk groups provides opportunity for early intervention. This data forms the basis for extensive evaluation of acute seizure management and monitoring long-term outcomes.

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### Long-term Safety and Efficacy of Add-on Cannabidiol (CBD) Treatment in Patients with Lennox Gastaut Syndrome in an Open-label Extension Trial (GWPCARE5)

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**Background:** Lennox-Gastaut syndrome (LGS) is a rare epileptic encephalopathy that is often treatment-resistant. The efficacy of cannabidiol (CBD) was demonstrated with an acceptable safety profile in two Phase 3 randomised controlled trials (RCTs): GWPCARE3 (NCT02224560) and GWPCARE4 (NCT02224690). A second interim analysis of the open-label extension (OLE) of the two RCTs was conducted to assess long-term safety and efficacy of add-on CBD treatment in patients with LGS.

**Methods:** Patients who completed a 14-week, double-blind, randomised controlled trial (GWPCARE3/NCT02224560; GWPCARE4/NCT02224690) could enter this OLE trial (GWPCARE5/NCT02224573). Patients received GW Pharmaceuticals' formulation of plant-derived highly purified CBD in oral solution (100 mg/mL) for  $\leq 3$  years. Primary endpoint was safety. Secondary endpoints were drop and total seizure frequency, and Subject/Caregiver Global Impression of Change (S/CGIC).

**Results:** Overall, 99% (366/368) of eligible patients with LGS entered the OLE trial. Median follow up was 61 weeks (3 days to 87 weeks); 88 patients (24%) withdrew. Mean age: 16 years; 33%  $\geq 18$  years; 54% male. Baseline median seizure frequency/28 days: 80 drop seizures; 168 total seizures. During the extended follow up, adverse event (AE) incidence: 94%; serious AE incidence: 33%; 11% discontinued owing to AEs. Most common AEs ( $\geq 20\%$ ): diarrhoea, convulsion, somnolence, pyrexia, vomiting and decreased appetite. Forty-seven patients (13%) had elevations in liver transaminases  $>3\times$  upper limit of normal; 35 (74%) were taking concomitant valproate. There were 5 deaths; none deemed treatment-related by the investigator(s). Median percentage reductions in seizure frequency (12-week windows over 72 weeks): 48-70% for drop seizures; 48-63% for total seizures. Approximately 88% of patients/caregivers reported an improvement in overall condition on the S/CGIC at Weeks 24 and 48.

**Conclusions:** Long-term add-on CBD treatment had a similar AE profile to that observed in the core studies at 14 weeks. Reductions in drop and total seizure frequency and improvements in overall condition were maintained through 72 weeks.