

Conclusions: Viral encephalitis may have serious neuropsychiatric consequences, especially during childhood while the brain development is not finished. When the neurological damage affects the frontal lobes of the brain, behavioural and personality disturbances are expected and an early multidisciplinary intervention should be considered. Antipsychotics are the gold standard pharmacological treatment for behavioural disturbances. During the scholar period, special curricular adaptations should be done in order to reduce study-related stress.

Disclosure of Interest: None Declared

EPP0013

Transcranial magnetic stimulation (TMS) in a child diagnosed with hypothalamic-pituitary tumour: a case report

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Introduction: Central nervous system (CNS) tumours are the most common type of solid tumour in the paediatric population. Although advances in treatment have improved survival rates, there is a substantial body of literature documenting the potential long-term effects such as psychological, neurocognitive and health-related sequelae experienced by survivors of paediatric brain tumours. TMS is a non-invasive brain stimulation technique that uses electrical stimuli applied to the cranial surface to restore neuronal connections damaged because of CNS disruption (Burke et al., 2019).

Objectives: To test the efficacy of TMS in a patient diagnosed with a CNS tumour who reported pain and suffered severe cognitive-behavioural alterations refractory to other pharmacological treatments.

Methods: *Case Presentation.* A 12-year-old boy diagnosed with a hypothalamic-pituitary tumour at the age of 9, having received surgical treatment, radiotherapy and chemotherapy. He suffered loss of vision, cognitive-behavioural and emotional sequelae, and pain, for which he received various pharmacological treatments without benefit. *Treatment.* The patient underwent a total of 25 sessions where each session took 20 minutes to complete for 3 sessions per week. TMS intervention consisted of 1200 inhibitory magnetic pulses with a frequency of 1Hz on right DLPFC at an intensity of 110% of resting motor threshold. Stimulations were carried out using a Magventure MagPro X100 equipment with a double-cone coil. The clinical assessment included The Silhouettes Fatigue Scale (PHQ-9), Pain Catastrophizing Scale (PCS) and Numerical Rating Scale (NRS), verbal subtests of the Weschler Intelligence Scale for Children (WISC-V), Patient Health Questionnaire (PHQ-9) and the Sleep Disturbance Scale for Children, SDSC

Results: In the post-treatment clinical interview with the family, qualitative changes included a decrease in subjective complaints of

pain and fatigue. The family reported that the child stopped sleeping tied up after the intervention and a significant change in slowness was observed, which was accompanied by a higher level of awareness and consequently a slight improvement at the behavioural level, which at the present time does allow for psychological intervention. The psychometric results were clinically improved for psychomotor activity, sleep, emotional alterations, and all cognitive domains.

Conclusions: 25 sessions of TMS in the right DLPFC could show beneficial effects on pain, fatigue, cognition, health and sleep variables in patients with drug-resistant sequelae derived from CNS tumours. Longitudinal studies with larger sample sizes are needed to determine whether the effects observed after TMS intervention in paediatric patients with CNS diseases are significant.

Disclosure of Interest: None Declared

EPP0014

Continuous Theta-Burst Stimulation in a 9-year-old girl with a history of neurotoxicity after Acute Lymphoblastic Leukemia B

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Introduction: Transcranial Magnetic Stimulation is a non invasive brain stimulation technique used for several neuropsychiatric conditions. The treatment of Acute Lymphoblastic Leukaemia (ALL) involves many cytotoxic drugs that inhibit the rapid growth of cancer cells, but also damage healthy cells, resulting in a wide range of adverse effects (Śliwa-Tytko et al., 2022). Studies have shown that approximately 10-30% of paediatric ALL patients suffer from psychiatric disorders. Therefore, new therapeutic tools are needed, and repetitive transcranial magnetic stimulation (rTMS) has demonstrated tolerability, effectiveness and safety in children (Allen et al., 2017).

Objectives: We discuss the first case of a 9-year-old girl diagnosed with acute lymphoblastic leukaemia B in who underwent Continuous Theta-Burst Stimulation

Methods: *Case Presentation.* In this study, we describe a case of a 9-year-old girl diagnosed with acute lymphoblastic leukaemia B in November 2016 who completed treatment in July 2019. Since April 2018 she presented symptoms of intracranial hypertension and encephalopathy with behavioural alterations, attention deficit secondary to toxicity. Psychotic outbreaks after toxicity from different treatments was also present. Since starting pericyazine (July 2022) there has been a slight improvement, but her symptoms continue to have a severe impact in her daily functioning. Baseline developmental profile assessed with the Battelle Inventory was significantly below the expected level in all developmental areas except for gross motor skills. *Treatment.* The TMS intervention consisted of the application on right DLPFC (F4), inhibitory cTBS protocol (5Hz

bursts and 3 pulses of 50 Hz each). The protocol consisted in delivering 2 sessions per day for 15 days (separated by 55 minutes), 4 minutes per session (3600 pulses/session), 30 sessions in total. An intensity of 100% of resting motor threshold (C4). TMS was performed with the Magventure Magpro X100 MagOption equipment, Cool DB-80 double cone coil. The Child Behaviour Checklist (CBCL) for parents was used to assess intervention effects.

Results: CBCL results reflect improvements in both internalising and externalising total scores after treatment. Specifically, the patient presents clinically significant decreases in several dimensions such as anxious/depressed symptoms, somatic complaints, and social problems. No adverse effects have been reported since the beginning of the intervention.

Conclusions: Internalising and externalising behaviours severity were reduced after 30 TMS sessions. In accordance with the latest systematic reviews on the safety of TMS in the paediatric patient (Zewdie et al, 2020) we propose the development of paediatric guidelines to offer this technique to patients with a history of intolerance or poor drug response.

Disclosure of Interest: None Declared

EPP0015

Long-term neurotoxicity in paediatric patients exposed to general anesthesia

Is there a relationship between exposure to general anesthesia in children between 0 and 4 years of age and the subsequent development of ADHD in childhood?

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Introduction: The Food and Drug Administration (FDA) recently issued new warnings about the possible effects of the repeated or prolonged use of general anaesthesia and sedatives on the brain development of children under 4 years old during surgeries or paediatric procedures.

Objectives: To evaluate the possible long-term neurotoxic impact the exposure to general anaesthesia has on the paediatric population from 0 to 4 years, which is the period during which the brain develops.

Methods: Initially, a search for observational studies that described the risk of neurotoxicity and alterations in the long-term cognitive development of children exposed to general anaesthesia before 4 years of age, was performed in PubMed between 2016 and 2020.

Results: Finally, 5 retrospective cohort studies comparing children exposed and not exposed to general anaesthesia were included in this study. None of these showed significant differences in their main study variables. However, three of these studies found significant differences in some of the secondary variables such as speed of processing, motor skills, internalization of behaviour and learning, and attention deficit hyperactivity disorder (ADHD).

Conclusions: In vitro and in vivo studies of anesthetics have shown serious neurotoxic effects in the developing brain. However, the clinical relevance of these findings for children undergoing anesthesia remains unclear.

Most of these studies suggest a strong relationship between exposure to anesthesia in children aged 0 to 4 years, this being greater after multiple exposures. Despite these results, many of these articles conclude that further research is needed on this topic.

Disclosure of Interest: None Declared

EPP0016

The risk of alcohol use disorders in offspring who had hyperactivity problems: The ALSPAC study

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Introduction: There is a paucity of population-based longitudinal studies examining the associations between childhood behavioural problems and alcohol use disorders in later life.

Objectives: This study aimed to examine the association between hyperactivity/inattention problems in early adolescence and the risk of alcohol use disorders in young adulthood.

Methods: We used data from the Avon Longitudinal Study of Parents and Children (ALSPAC), a population-based prospective cohort based in Bristol, United Kingdom. Hyperactivity/inattention problems at 11 years of age were measured using the Strengths and Difficulties Questionnaire (SDQ). Logistic regression analyses were used to examine associations. E-values (E) were calculated to estimate the extent of unmeasured confounding.

Results: Hyperactivity/ inattention problems in early adolescence were associated with a 1.75-fold increased risk of any alcohol use disorders (OR = 1.75, 95% CI: 1.20-2.56; E= 2.90, CI: 1.69) and a 4-fold increased risk of severe alcohol use disorders at age 24 (OR = 4.35, 95% CI: 2.00 – 9.47; E= 8.17, CI: 3.58). We also found a 2.09 (OR = 2.09, 95 % CI: 1.24-3.53; E= 3.60, CI: 1.79) and 1.63-fold (OR = 1.63, 95% CI: 1.07 – 2.49; E= 2.64, CI: 1.34) increased risk of alcohol dependence symptoms and alcohol abuse symptoms at age 24 in offspring who had hyperactivity problems at age 11, respectively.

Conclusions: Hyperactivity/ inattention problems in early adolescence were associated with an increased risk of alcohol use disorder symptoms in adulthood, even when controlling for conduct problems. Associations did not appear to differ by gender and unmeasured or unknown confounders were unlikely to alter the observed associations.

Disclosure of Interest: None Declared

EPP0017

Comparison of irritability, sleep and chronotype characteristics in children with Anxiety Disorder and ADHD

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