Open Access
www.openaccessjournals.com

Journal of Neonatal Studies

Responsive Vagus Nerve Stimulation for drug-resistant pediatric epilepsy

Dr. Marotta R

Child Neuropsychiatry Service, U.O.C. of Pediatrics, Hospital "Pugliese-Ciaccio", Catanzaro, Italy

Abstarct

Introduction: Close-loop VNS neurostimulator is able to detect episode of ictal tachycardia and identify it as pre-critical episode, therefore linked to onset of a crisis. In addition to standard VNS open-loop stimulation, this responsive device provides automatic stimulation produced in response to sudden increase in heart rate of at least 20% of the basic one. We wanted to show our experience with use of responsive Aspire SR 106 system in drug resistant pediatric epilepsy. Material and method: We selected 6 patients, 3 males and 3 females, 2 with Post Traumatic Epilepsy, 1 with Postanossic, 2 with Criptogenetic Epilepsy. Age at implantation was 13 + _ 4.4 years, duration of disease was 9 + -2 years. All patients underwent to implant of responsive Aspire SR 106: surgical procedure was not different from implantation of standard VNS system but position of generator was more medially. Stimulation started 15 days after implant and effective amplitude was achieved with increments of 0.50 mA every two weeks. Follow-up varied from 6 months to 12 months. Results: 1 patient presented complete resolution of seizures with control of both partial and generalized seizures, 3 patients reduction of seizures frequency > 50%, 1 patient reduction <50%, while 1 patient did not present substantial improvement. In responder patients was also detected significant reduction in seizures duration and thy declared themselves satisfied with the result. In one case there were side effects consisting of cough and dysphonia that limited the increase of stimulation amplitude. VNS had effects on QoL with reduction in anxiety, mood improvement, enhanced verbal recognition memory. Conclusions: Responsive VNS therapy may be considered in pediatric patients with medically refractory epilepsy who are not favorable candidates for resection. It is safe procedure with low morbidity. VNS decreases seizure frequency but also reduce their intensity and has favourable effect on patient's mood.

Biography

Degree in Medicine and Surgery, Federico II Faculty of Medicine, University of Naples, Italy; Postgraduate Diploma in Child Neuropsychiatry, Federico II Faculty of Medicine, University of Naples and in Pediatrics, Faculty of Medicine of Catanzaro, University of Reggio Calabria, Italy; Academic degree: Aggregate Professor of Child Neuropsychiatry, Department of Medical and Surgical Sciences, University "Magna Graecia" of Catanzaro, Italy; Member appointed by the Dean School of Medicine and Surgery in the University Committee for Disability, University "Magna Graecia of Catanzaro. Health degree: Head of Child Neuropsychiatry Service, U.O.C. of Pediatrics, "Pugliese-Ciaccio" Hospital, Catanzaro.

Dr Marotta has her expertise in:1) Clinical-behavioral assessment of individuals with Autism Spectrum Disorder, 2) Evaluation of the evolutionary pathway of subjects affected by neurodevelopmental disorders, with particular reference to intellectual disability and epilepsy.

Publications

1. Hamilton P, Soryal I, Dhahri P. (2018) Clinical outcomes of VNS therapy with AspireSR (including cardiac-based seizure detection) at a large complex epilepsy and surgery center. Seizure 58: 120-126
2. Hartshom A, Jobst B. (2018) Responsive brain stimulation in epilepsy. The Adv Chronic Dis. 9, (7):135-142
3. El Tahry R, Hirsch M, Van Rijckevorsel K, Santos SF, de Tourtchaninoff M, Rooijakkers H, Coenen V, Schulze-Bonhage A. (2016) Early experiences with tachycardia-triggered vagus nerve stimulation using the AspireSR stimulator. Epileptic Disord. Jun 1;18(2):155-162
4. Bigelow MD, Kouzani AZ. (2019) Neural stimulation systems for the control of refractory epilepsy: a review. J Neuroeng Rehabil. Oct 29;16(1):126
5. Giordano F, Zicca A, Barba C, Guerrini R, Genitori L. (2017) Vagus nerve stimulation: Surgical technique of implantation and revision and related morbidity. Epilepsia. 2017 Apr;58 Suppl 1:85-90

Citation: Dr. Marotta R, Responsive Vagus Nerve Stimulation for drug-resistant pediatric epilepsy, Pediatric Neurology 2020: Global Summit on Advances in Pediatrics and Pediatric Neurology, Paris, 19-20 February 2020, pp: 02