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Efficacy of the Vagus Nerve Stimulation (VNS) for treatment of refractive epilepsy in the pediatric population: our institutional series

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Introduction: Pediatric epilepsy is one of the most prevalent neurological disorders of the childhood. Notably, at least 20-30 % of these patients are treatment-resistant. Since 2008, our Unit of Epilepsy Surgery recommends *vagus* nerve stimulation (VNS) as a palliative treatment for patients who are not candidates for functional surgery. In this study, we have reviewed our institutional series to assess the impact of VNS on seizures and quality of life of pediatric epileptic patients.

Methods: We retrospectively reviewed the medical records of 30 patients with treatment-resistant epilepsy who received surgical implantation of the VNS device in our Unit between 2008 and 2013. Quality of life of patients was monitored by means of the Questionnaire CAVE (from Spanish: *escala de calidad de vida del niño con epilepsia*) and an interview over the phone.

Results: Complete follow-up data was obtained for all 30 patients (64% boys and 36% girls), median age at time of diagnosis was 21 months (range 1-114 months) and median follow-up was 18 months (range 6-48 months). Reduction of seizure frequency occurred in 38% of patients after 6 months from VNS insertion, in 43% after 12 months, in 42% at 24 months and in 54% after 36 months. Post-implantation evaluation recorded response at least in 50% of patients. According to CAVE, 54% of families observed a positive or very positive and 39% a regular impact on the quality of life of patients. Technical and functional complications of the VNS stimulator occurred in two patients.

Conclusions: The VNS is a safe, generally well tolerated, palliative treatment for pediatric patients with treatment-resistant epilepsy that shows a positive impact on the quality of life of patients and their families.