Vagus nerve stimulation for refractory status epilepticus treatment

- Optimizing vagus nerve stimulation for Super Refractory Status Epilepticus: A case series and systematic review
- Successful application of vagus nerve stimulation in super refractory status epilepticus associated with MERRF syndrome
- Diagnostics and Non-pharmacological interventions for refractory and super refractory status epilepticus in Germany: A comprehensive analysis of 4 years of billing data
- Neurostimulation in Childhood Epilepsy
- Vagus nerve stimulation and fast parameter programming protocol in children with febrile infection-related epilepsy syndrome in ICU
- Immediate Postoperative Activation of Vagus Nerve Stimulation (VNS) for Super-refractory Status Epilepticus: A Case Report
- NORSE secondary to anti-GAD65 antibody-positive encephalitis treated with novel adjunctive rapid titration VNS protocol
- Surgical management of status epilepticus: A systematic review

Dibué-Adjei et al. performed an updated systematic review of the literature on efficacy of VNS in refractory status epilepticus/Super-Refractory Status Epilepticus by including all reported patients.

They systematically searched EMBASE, CENTRAL, Opengrey.eu, and ClinicalTrials.gov, and PubMed databases to identify studies reporting the use of Vagus nerve stimulation for RSE and/or SRSE. We also searched conference abstracts from AES and ILAE meetings.

45 patients were identified in total of which 38 were acute implantations of VNS in RSE/SRSE. Five cases had VNS implantation for epilepsia partialis continua, one for refractory electrical status epilepticus in sleep and one for acute encephalitis with refractory repetitive focal seizures. Acute VNS implantation was associated with cessation of RSE/SRSE in 74% (28/38) of acute cases. Cessation did not occur in 18% (7/38) of cases and four deaths were reported (11%); all of them due to the underlying disease and unlikely related to VNS implantation. Median duration of the RSE/SRSE episode pre and post VNS implantation was 18 days (range: 3-1680 days) and 8 days (range: 3-84 days) respectively. Positive outcomes occurred in 82% (31/38) of cases.

VNS can interrupt RSE and SRSE in 74% of patients; data originate from reported studies classified as level IV and the risk for reporting bias is high. Further prospective studies are warranted to investigate acute VNS in RSE and SRSE [1)]

1)
Dibué-Adjei M, Brigo F, Yamamoto T, Vonck K, Trinka E. Vagus nerve stimulation in refractory and super-refractory status epilepticus - A systematic review. Brain Stimul. 2019 Sep-Oct;12(5):1101-1110. doi: 10.1016/j.brs.2019.05.011. Epub 2019 May 14. PMID: 31126871.