

Vagus Nerve Stimulation in children: Ten years of experience

Jørgen Alving, MD, Hanne Nielsen, RN, and Kern Olofsson, MD
Danish Epilepsy Centre, 4293 Dianalund, DENMARK

Aim of study: to evaluate the short- and long-term efficacy of Vagus Nerve Stimulation (VNS) in children with intractable epilepsy

Patients: Table 1

All 25 children, with difficult-to-treat epilepsy, have been evaluated during 1996-2006.

25 children had 1 year follow up.

19 children had 2 yrs. follow up

15 children had 3 yrs follow up

7 children were evaluated for surgery before implantation.

All except 1 were mentally retarded, half of them severely

Number of AED

Six to ten AEDs were tried before VNS.

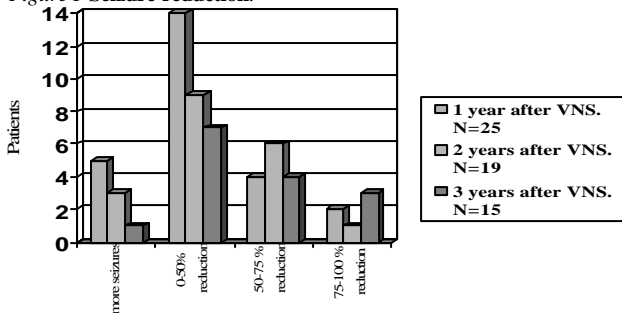
Four also had tried the ketogenic diet.

Table 1

Material:	N = 25
Mental retardation: moderate/ severe	12/12
Epilepsy syndromes:	
localization-related / generalized	17/8
Etiology	
encephalitis/cortical dysplasia	2/5
cryptogenic/ other	13/5
Duration of epilepsy	3-14 yrs.
Age	3-17 yrs.

Results:

Figure 1 Seizure reduction:



Patients who left the study

At 2 yrs. FU: 2 VNS off, 1 patient died, 3 only 1 year FU

At 3 yrs. FU: 1 VNS off, 2 VNS removed, 1 only 2 years FU

Figure 2 Number of AED before and 3 yrs. after VNS

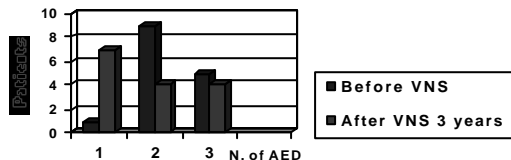


figure 3 Adverse reactions after 1 year (N = 25):

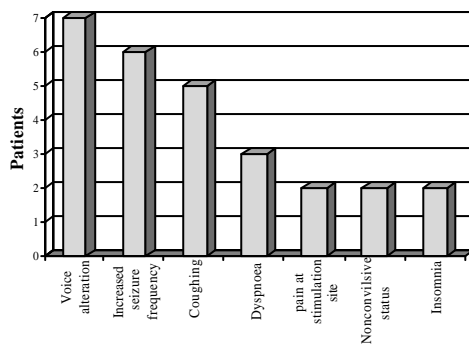
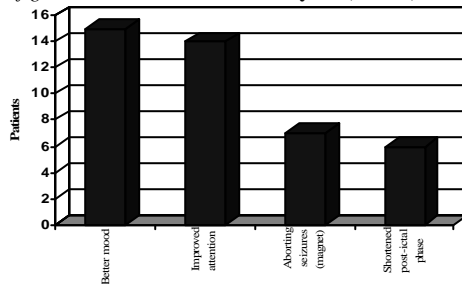


figure 4 Positive effects after 1 year (N = 25):



Conclusion: VNS is a safe, well-tolerated and effective treatment option for children with intractable epilepsy. The effect seems to be sustained over a prolonged period, and in accordance with previous findings in adults, to increase over time. The high frequency of positive effects on mood and attention is noteworthy.