

Eliminating Unnecessary Hospital Stays and Prolonged Antibiotics: Success with Outpatient Vagal Nerve Stimulator Surgery

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Introduction

Vagal nerve stimulators (VNS) are a mainstay in the treatment of generalized medically refractory epilepsy. They are not without complications including infection rates of 3-8%. Current guidelines for antibiotic prophylaxis of surgical site infections are a single dose of antibiotics 30 minutes prior to incision, without evidence supporting continued administration. In line with that, we infuse a single dose of vancomycin 30-60 prior to incision. Patients are discharged from the recovery room following anesthesia clearance. We propose that our infection rate is on par with historical policies admitting patients postoperatively for 24 hours of antibiotics.

Methods

A retrospective chart review was performed on all children who underwent VNS implantation, including subsequent revision, at CHLA from 1998-2013, receiving only a single dose of antibiotics pre-operatively. We analyzed patient, epilepsy and surgery related factors. We compared our infection rate to published data.

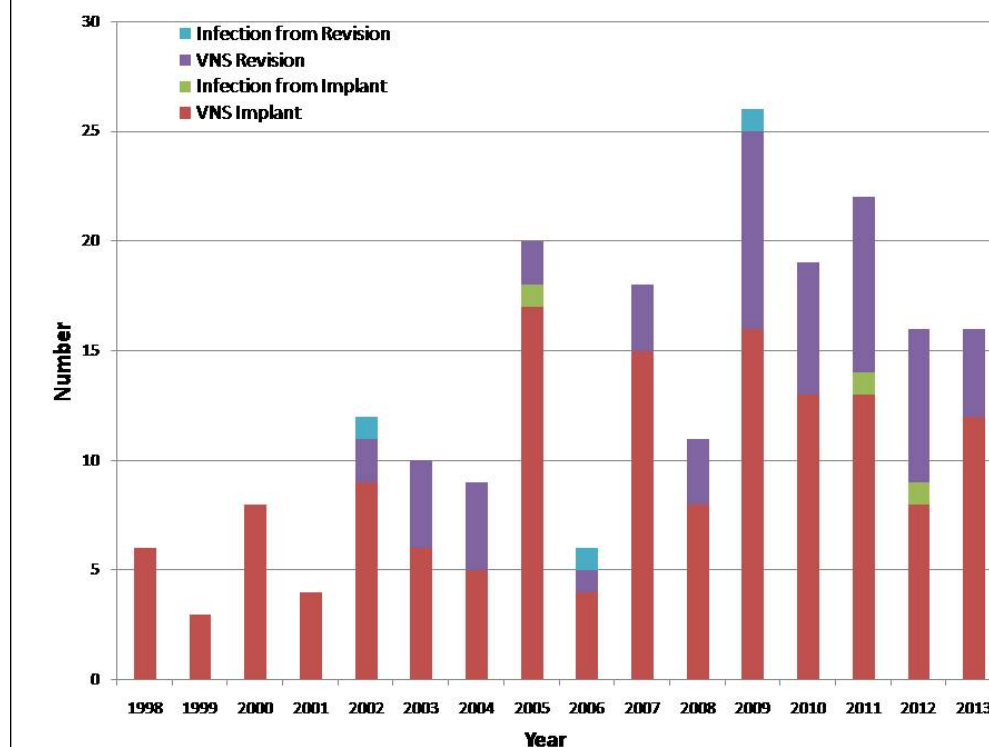
Results

Over the past 15 years, 143 children with medically refractory epilepsy underwent placement of a VNS with single dose antibiotic prophylaxis. There were only 3 infections (all Staph aureus) following implantation for a rate of 2%. Our patient population underwent 54 VNS revisions/battery changes under a single dose of vancomycin, with 3 Staph aureus infections (revision infection rate = 5.5%, lead revisions n=2, battery n=1). Infections were unrelated to operative duration, number or type of surgeons scrubbed, timing or dose of vancomycin, patient age, diagnosis or weight.

Conclusions

A single dose of vancomycin prior to VNS surgery is effective prophylaxis of surgical site infections. Our infection rate of 2% for initial implantation and 5.5% for VNS revisions is comparable to infection rates achieved with an overnight admission for 24 hour

Incidence of VNS Placement, Revision and Infection



Learning Objectives

- By the conclusion of this session, participants should be able to:
- 1) Describe the guidelines for surgical site prophylaxis
 - 2) Discuss whether a common practice of 24 hrs of antibiotic prophylaxis for implants is necessary
 - 3) Appreciate the potential economic impact of reducing length of stay and hospital cost