

DIFFERENCES IN SACRAL NEUROMODULATION DEVICE INFECTION RATES BASED ON PREOPERATIVE ANTIBIOTIC SELECTIONS

Hypothesis / aims of study

Sacral Neuromodulation (SNM) has become an effective modality to treat refractory urgency incontinence and nonobstructive urinary retention. With this treatment option becoming more popular, it is important to provide optimal care when performing this procedure. It can be devastating for both the patient and the physician when a device must be removed due to infection. We looked to determine if specific preoperative antibiotic regimens factored into infections and subsequent explant of the device.

Study design, materials and methods

This was a retrospective review from 2007-2010 of all patients who had the SNM device implanted. All patients had a percutaneous trial with a subsequent lead and battery implant or a staged implant. Each Interstim device was implanted by 3 different surgeons. Each patient received preoperative antibiotics according to surgeon preference. The antibiotic regimens used were cefazolin alone, vancomycin alone, or vancomycin and gentamycin. We also looked at other variables including surgeon, location (outpatient surgery center vs. university hospital), gender, comorbidities, history of urinary tract infections, and preoperative prep. All patients were also discharged with five to seven days of postoperative antibiotics. In those patients who did have an infection and subsequent explant, cultures and sensitivities of the device were obtained.

Results

There were a total of 136 patients that had the SNM device implanted with a total of eight infections that required explantation for an infection rate of 5.8%. Cefazolin alone was less effective in preventing infection compared to the other antibiotic regimens ($p= 0.039$). The Odds of having an infection in cefazolin treated patients was 4.89 times that of other patients treated with another antibiotic regimen. Seven out of the eight infections with explant grew *Staphylococcus aureus* that was resistant to cephalosporins. None of the other variables proved to be a statistically significant contributor.

Concluding message

In this series the preoperative antibiotic selection was significant in preventing a subsequent infection and explant. We found that cefazolin was less effective in preventing an infection likely due to resistant organisms. We have adopted using vancomycin +/- gentamicin as our preoperative antibiotics of choice.

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| <i>What were the subjects in the study?</i> | HUMAN |
| <i>Was this study approved by an ethics committee?</i> | Yes |
| <i>Specify Name of Ethics Committee</i> | IRB approval was obtained at the University of Michigan |
| <i>Was the Declaration of Helsinki followed?</i> | Yes |
| <i>Was informed consent obtained from the patients?</i> | No |