EXPERIENCE WITH PROPHYLACTIC GENTAMICIN DURING PENILE PROSTHESIS SURGERY: A RETROSPECTIVE COMPARISON OF TWO DIFFERENT DOSES

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Mechanism of Gentamicin Action
“Bugs” Sensitive to Gentamicin

Gram negative
  . Pseudomonas
  . Proteus
  . Escherichia coli
  . Klebsiella pneumoniae
  . Enterobacter aerogenes
  . Serratia

Gram positive: Staphylococcus
Guidelines for Once Daily Gentamicin

1. Gentamicin should not be used in the following
   a. Myasthenia Gravis
   b. Hypersensitivity
   c. Severe renal impairment

2. Once daily high dosing should not be used in patients with the following
   a. Infectious endocarditis
   b. Major burns (>20% of body surface area)

3. Dose determination and Administration
   a. The standard prophylaxis dose is 3mg/kg
   b. The standard treatment dose is 5mg/kg
   c. No single dose of Gentamicin should exceed 520 mg
   d. Dose should be rounded down to the nearest 40mg
   e. Dose of 5mg/kg should be given over 30 minutes
   f. Non-obese: use actual body weight to determine the dose
   g. Obese (>20% above ideal body weight): Should receive a relatively lower dose
OBJECTIVES

To compare low versus high dose Gentamicin as prophylaxis during inflatable penile (IPP) prosthesis implantation.
METHODS

. We retrospectively analyzed 2 groups of patients who underwent IPP placement.

. Group 1 - 490 patients who underwent IPP placement between April 14, 2012 and April 13, 2014 and received a low dose of preoperative gentamicin at 80mg/8 hours for one day.

. Group 2 - 407 patients who underwent IPP placement between April 14, 2014 and April 13, 2016 and received a high dose of preoperative gentamicin at 5mg/kg.
METHODS

We compared the infection rates of IPP as well as any gentamicin related toxicities.

All the procedures were performed by one surgeon.

All patients received additional Vancomycin 1 gram prior to incision and at 12 hours postoperatively.
MAIN OUTCOME MEASURES

IPP infection rate were compared. Potential toxicities from the higher dose of gentamicin were closely monitored.
Figure 1

Overall IPP Infection Rate (Percentage)

- **Group 1**: n=490, 1.2245%
- **Group 2**: n=407, 0.7371%
Figure 2

"De Novo" IPP Infection Rate (Percentage)

- Group 1: n=441, Infection Rate = 1.1468
- Group 2: n=357, Infection Rate = 0.5602
RESULTS

• There were 6 cases in Group 1 (5 de-novo cases and 1 redo case, infection rate 1.22%) and 3 cases in Group 2 (2 de-novo cases and 1 redo case, infection rate 0.74%) who were found to have IPP infection.

• The infection rate in Group 2 appeared to be lower compared to that of Group 1, even though a significant statistical difference was not achieved (p=0.057).

• Similar finding was noted by comparison of infection rates for de-novo cases within the two groups (p=0.063).
CONCLUSIONS

• Although not achieving statistical difference there was a trend for patients receiving a higher dose of preoperative gentamicin to have a lower IPP infection rate.

• No toxicity was encountered from the 5 mg/kg gentamicin dose.

• We recommend following prophylactic high dose Gentamicin guidelines.