

**(MP58-13) NEXT-GENERATION
SEQUENCING OF DNA APPEARS TO
IDENTIFY BIOFILM AND ANTIMICROBIAL
SENSITIVITIES/RESISTANCES ON PENILE
PROSTHESES BETTER THAN
TRADITIONAL CULTURE METHODS IN-
VIVO: THE NEW GOLD STANDARD?**

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Introduction

- Previous studies have used traditional culture methods to identify microbial species present at removal and replacement of penile prostheses.
- Next generation sequencing of microbial DNA is considered the gold standard in other medical specialties.
- The purpose of this study was to compare biofilm compositions and antimicrobial sensitivities at penile prosthesis removal/replacement using next generation DNA sequencing to traditional culture methods.

Methods

- Two intraoperative penile prosthesis pump fluid / biofilm specimens were submitted at the time of revision surgery.
- For the next generation DNA sequencing methods, the pathogens' genetic signatures and the relative abundances of organisms present in each specimen with any biofilm pathogens evaluated against unique antimicrobial agents.

Results

- 101 patients had both traditional and next generation sequencing results to compare.
- Some of the bacteria identified using both methods were known prosthetic infectious pathogens, with the next generation DNA sequencing producing more isolates (average of 9) than traditional culture methods ($p < 0.01$).
- Many of the next generation sequencing isolates had 34 unique antimicrobial resistance genes detected, which was significantly higher than traditional culture methods with an average of 7.3 ($p < 0.05$).

Conclusions:

Next generation sequencing of DNA appears to be beneficial in its more thorough analysis of biofilm composition on penile prosthesis in vivo. It appears to be more sensitive, gives relative abundance, and more antibiotic data than traditional culture methods.

