Urinary HIP/PAP and BD-1 indicate surgical success after pediatric ureteropelvic junction obstruction surgery

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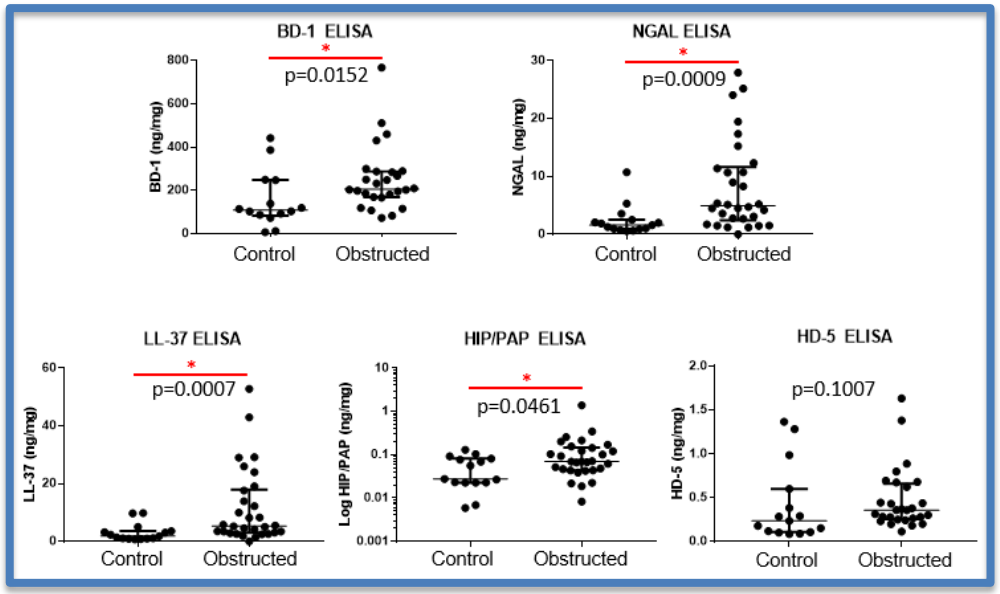
NATIONWIDE CHILDREN'S

When your child needs a hospital, everything matters.℠

Background

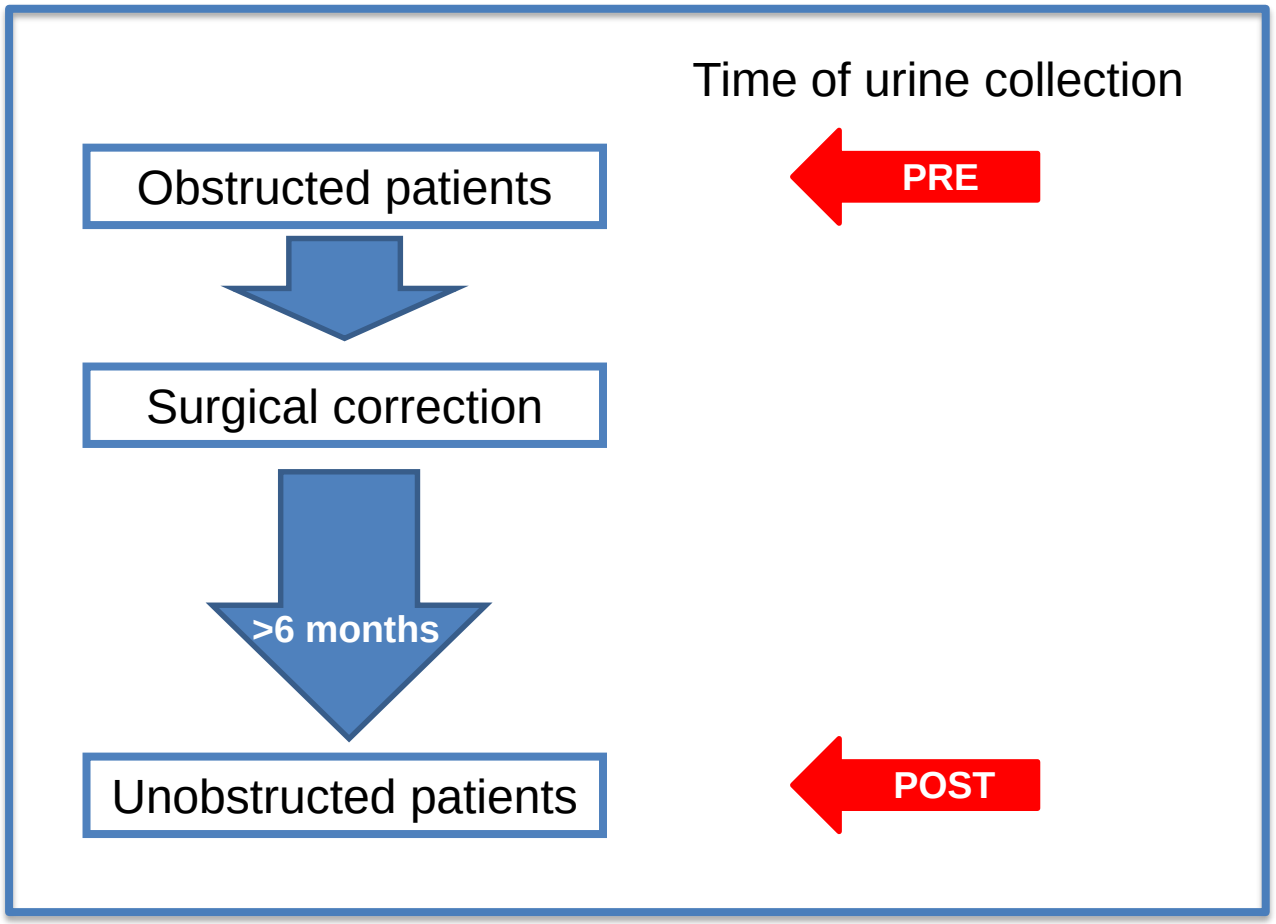
- Antimicrobial peptides (AMPs) are innately expressed peptides known to help maintain sterility of the urinary tract
- Previously found specific AMPs to be ↑ in UPJO
  - Could be markers of urinary tract stress



Background

- Aim: reevaluate AMPs after relief of obstruction
- Hypothesis: once elevated AMPs would ↓ after successful surgery

Methods

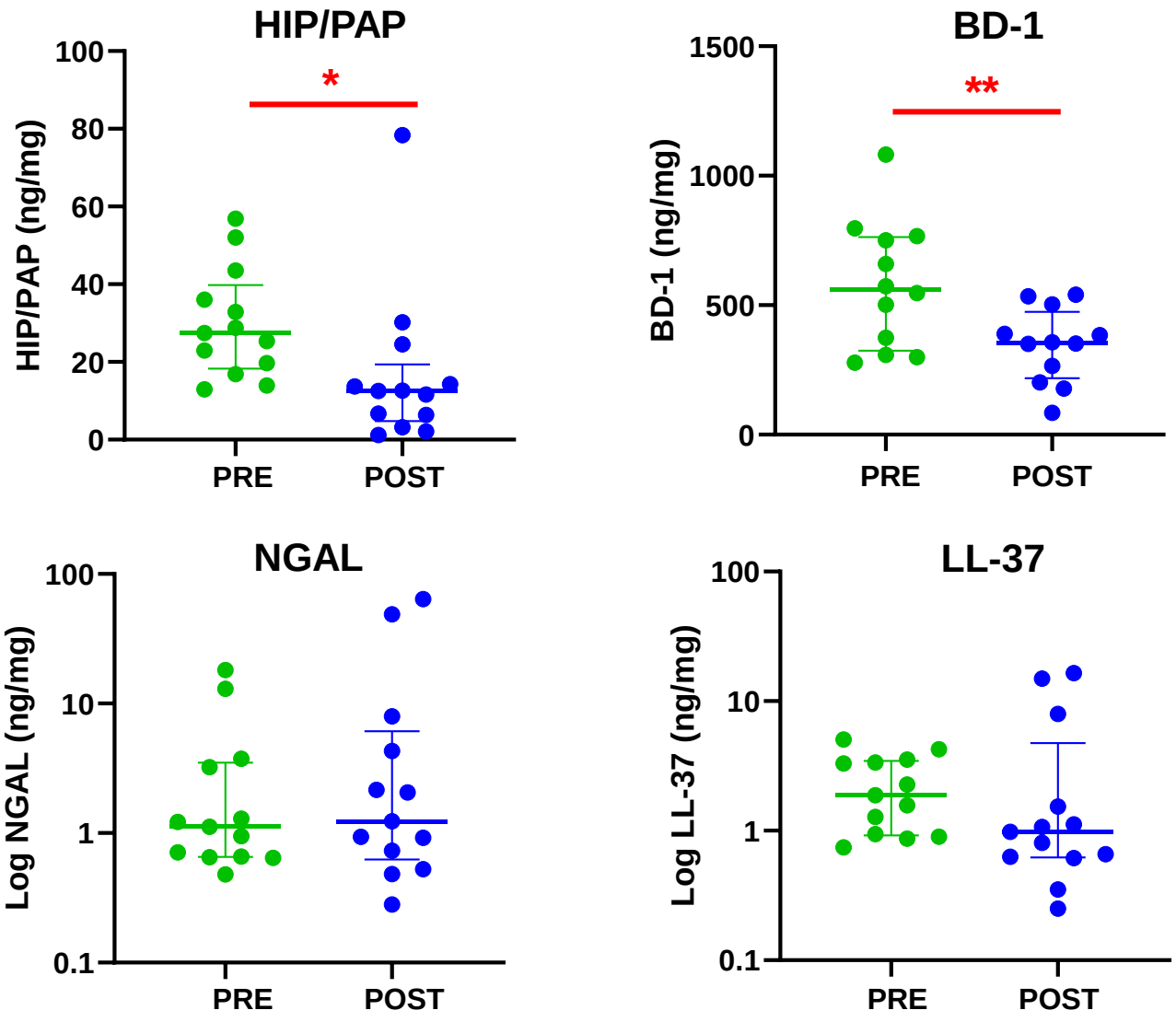


- ≤18 year olds
  - No signs of active UTI
- ELISAs on specific AMPs
  - BD-1, HIP/PAP, LL-37, and NGAL
- Compared Pre-intervention and Post-intervention samples

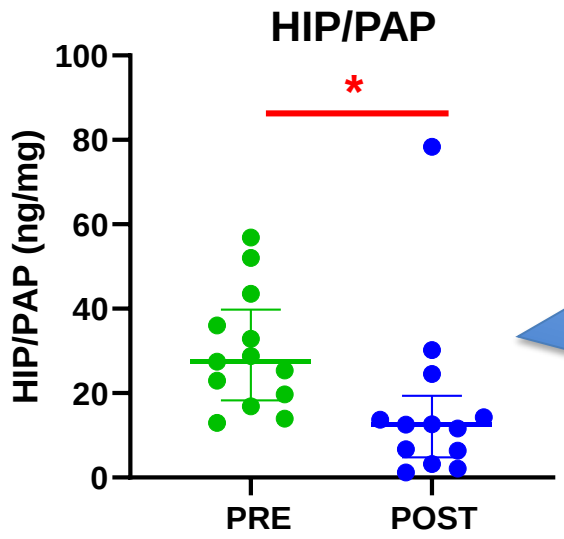
Results

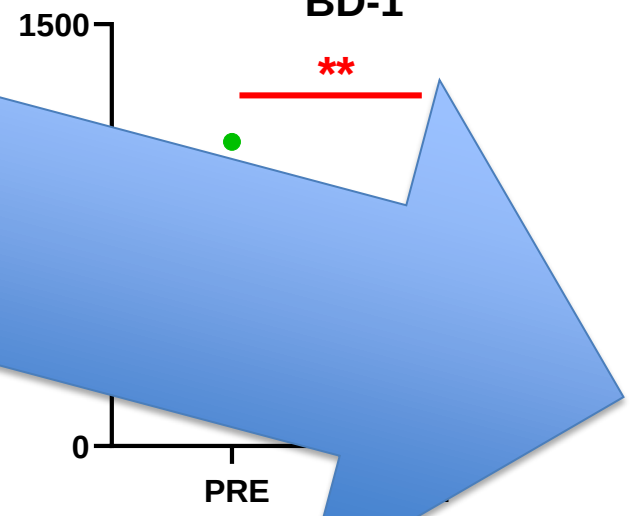
Demographic	Obstructed patients (n=13)
Median age at surgery in years (range)	4.3 (0.4-18.4)
Male (%)	9 (69)
Median time from surgery in months (range)	27.4 (7.8-45.3)
Clinical/radiologic improvement postoperatively (%)	13 (100)

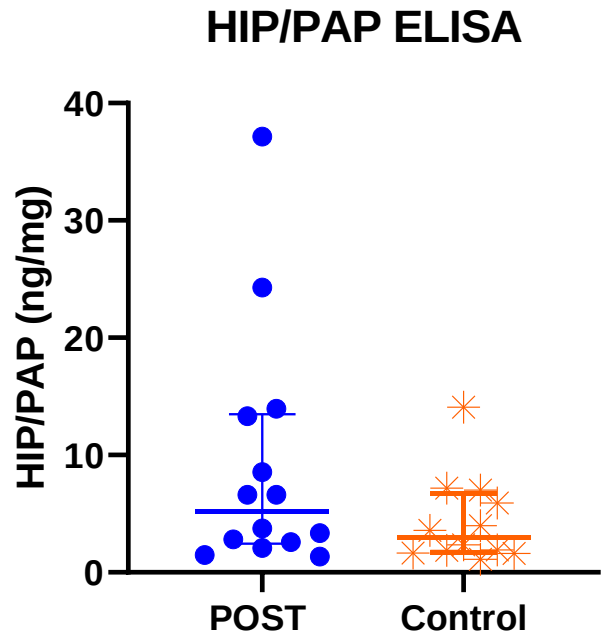
HIP/PAP and BD-1 levels significantly decreased after successful surgical correction

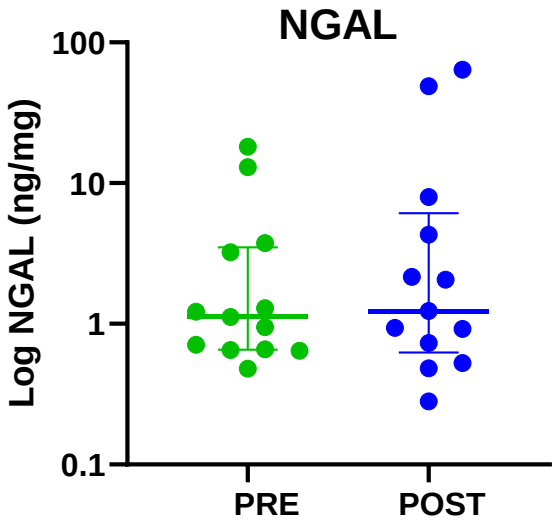


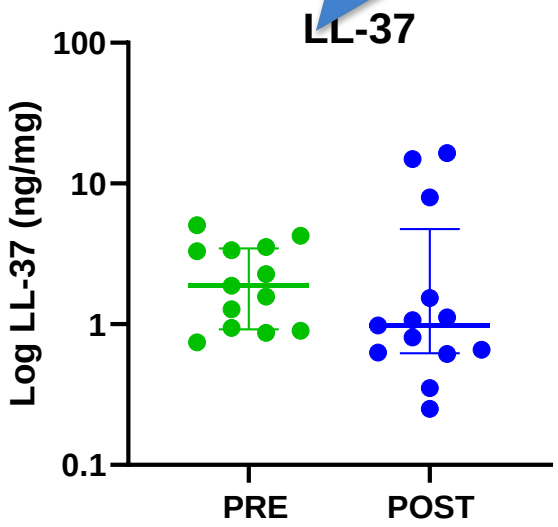
HIP/PAP levels normalize after successful surgical correction





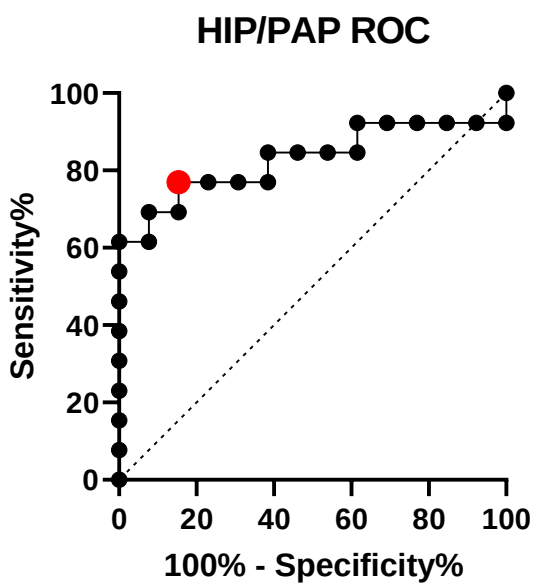


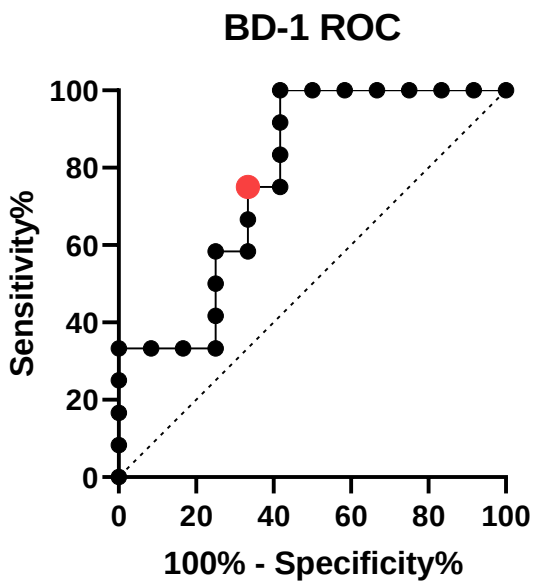




HIP/PAP and BD-1 decrease after successful surgery

AMP	Area under curve	Sensitivity	Specificity
HIP/PAP	83%	77%	85%
BD-1	78%	75%	67%





Conclusions

- HIP/PAP and BD-1 significantly decrease with successful surgical intervention
  - Promise as aids in post-operative monitoring
    - Imaging can be difficult to interpret
- NGAL and LL-37 remained elevated
  - Could suggest irreversible damage