

MP03-08

ASSOCIATION OF PRIOR PREGNANCY WITH 24-HOUR URINE COMPOSITION AND STONE RISK

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MP03-08: Association of prior pregnancy with 24-hour urine composition and stone risk

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Introduction and objective

- Nephrolithiasis affects between 1/200 to 1/2000 pregnancies. Pregnancy-related urinary changes include hypercalciuria and alkaline urine pH.
- To determine whether multigravidity is associated with long-term changes to urinary milieu and increased stone risk

Methods

- Retrospective single-center chart review of eligible stone-forming female patients with 24-hour urinalyses (Apr 2007 to Dec 2017)
- Prior pregnancies were assessed with a phone questionnaire.
- 24-hour urine metabolic profiles including SSCaP, urine pH, urine calcium were assessed for association with # of prior pregnancies. Likelihood of calcium phosphate (CaPhos) stone formation also assessed.

Results

- Previously gravid women are more likely to exhibit hypercalciuria compared with nulligravid women (50% vs 23%, $p = 0.021$)
- Urine Ca was increased in G3+ women compared to G0 (212 mg/day vs 153 mg/day, $p = 0.025$)

	G0	G3+	
	Referent	Δ Coef. (95% CI)	p-value
Urine pH	–	0.20 (-0.105 – 0.50)	0.20
SSCaP	–	0.49 (0.00184 – 0.98)	0.049
Ca24	–	51 (2.31–100)	0.040

- G3+ women were significantly more likely than nulligravids to have stones containing >10% CaPhos (OR 3.7, $p=0.014$); However, no difference in the odds of predominately CaPhos stone formation was observed
- G3+ women had significantly greater number of stone related surgical procedures ($p = 0.009$)

Conclusions

- Multigravid women are more likely to exhibit hypercalciuria and elevated SSCaP, several years post-partum suggesting long term effects on the urinary milieu.
- G3+ women had significantly greater number of stone-related surgical procedures suggesting these changes are of clinical importance
- However, there was no proclivity in the formation of predominately CaPhos stones, suggesting that pregnancy is only one of many factors contributing to nephrolithiasis

