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Diagnostic Features and Clinical Outcomes of Children with Tubulointerstitial Nephritis and Uveitis Syndrome (TINU)

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Research Abstract Title

Diagnostic Features and Clinical Outcomes of Children with Tubulointerstitial Nephritis and Uveitis Syndrome (TINU)

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☐ **Medical Student**
☒ **Resident/Psychology Intern (≤ 1 month of dedicated research time)**
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Other authors/contributors involved in project: Erin Stahl, M.D. ; Darcy Weidemann, M.D.

IRB Number: Exemption was granted by our institutional review board.

Describe role of Submitting/Presenting Trainee in this project (limit 150 words):

I performed chart review for all subjects, extracted all data for subjects including but not limited to demographic information, presenting symptoms, ophthalmology visual reports, kidney imaging/biopsy results, and treatments received. Drafted the abstract with my primary mentor, and met several times to discuss the study.

Background, Objectives/Goal, Methods/Design, Results, Conclusions limited to 500 words

Background:

Tubulointerstitial nephritis and uveitis (TINU) syndrome is an inflammatory disease that affects the kidneys and eyes. TINU is rare, but likely under-recognized due to variable clinical presentation, nonspecific symptoms, and lack of universally accepted diagnostic criteria. The optimal treatment approach in children with TINU remains unknown.

Objectives/Goal:

The purpose of this case series is to contribute further knowledge to this rare disease by describing disease features and treatment response of patients with TINU treated at a single center.

Methods/Design:

A retrospective chart review was performed of children diagnosed with TINU at a single tertiary care children's hospital since January 2013. Data collected include demographics, clinical features,

laboratory testing, eye exam findings and complications, kidney biopsy results, and treatment response.

Results:

Nine patients with TINU were identified over an 8-year period (mean age 12.4 years; 67% male). Clinical characteristics are summarized in Table 1. All patients had uveitis at initial diagnosis. Most presented with symptomatic uveitis (n=6) and had acute interstitial nephritis (AIN) found during diagnostic workup, 2 presented primarily with renal manifestations and had uveitis on initial eye exam, and one was first diagnosed with idiopathic uveitis but developed signs of AIN concurrent with uveitis flare during medication taper at month 51. Urine β-2microglobulin (β2MG) was significantly elevated in all patients at the time of AIN diagnosis. Kidney biopsy confirmed presence of interstitial nephritis in 5 and was declined in 4. All patients had steroid refractory or dependent uveitis and required at least one chronic immunomodulator (Figure 1). 8 achieved uveitis quiescence, one was lost to follow up. 5 patients experienced at least one ocular complication, but visual outcomes were good (best corrected visual acuity 20/40 or better in 100%) at last recorded visit. All had improvement in eGFR, with 5/9 (55.5%) normal at the last visit.

Conclusions:

In this TINU cohort, creatinine and urine dipstick were inadequate to identify all uveitis patients with AIN. Urine β2MG was elevated in 100% of patients and is a useful screening tool for TINU in children with uveitis. All 9 patients required chronic immunomodulation to achieve steroid-free uveitis control, and most required tumor-necrosis-factor-α inhibition. Future multi-center studies are key to furthering understanding of this rare condition and defining optimal treatment approach.