



Tubulointerstitial Nephritis and Uveitis Syndrome

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Overview

- Definition
 - Immune-mediated inflammation involving the kidney and the eye
 - Uveitis is usually bilateral, non-granulomatous anterior uveitis, but posterior segment involvement has been reported
- Symptoms
 - Pain
 - Photophobia
 - Blurry vision
- Laterality
 - Bilateral
- Course
 - Nephritis is self-limited and rarely recurs, but uveitis can become recurrent in 40%
 - In 65% of cases, acute nephritis precedes uveitis by weeks to months; 20% uveitis precedes nephritis; 15% nephritis and uveitis occur concurrently
- Age of onset
 - Children and adolescent, with median age of 15 years
- Gender/race
 - F:M = 3:1
 - No racial predilection
- Systemic association
 - Tubulointerstitial nephritis: injury to renal tubules and interstitium (*not* involving the glomeruli), leading to decreased renal function
 - Several HLA haplotypes have been associated with TINU, but HLA-DRB1*0102 represents the strongest association

Exam: Ocular

Anterior segment

- Non-granulomatous AC inflammation, ranging from mild to severe

Posterior Segment

- Uncommon: papillitis, cystoid macular edema, retinal pigment epithelial detachments, retinal vascular sheathing, vitritis, neuroretinitis, multifocal choroiditis
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Exam: Systemic

- Abdominal or flank pain
 - Fatigue
 - Fever
 - Headache
 - Anorexia and weight loss
 - BP usually normal
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Imaging

- OCT
 - CME (rare)
 - FA
 - Optic nerve leakage or vascular staining (rare)
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Laboratory and Radiographic Testing

- Renal biopsy (for definitive diagnosis): tubulointerstitial nephritis
 - Urinalysis: elevated beta-2 microglobulin, mild proteinuria, eosinophilia, pyuria or hematuria without infection, normoglycemic glycosuria, white cell casts
 - Bloodwork: elevated serum creatinine or decreased creatinine clearance, anemia, abnormal LFTs, elevated ESR
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Differential Diagnosis

Inflammatory diseases that can affect the kidney and the eye:

- Systemic lupus erythematosus
- Sarcoidosis

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- Granulomatosis and polyangiitis
 - Adamantiades-Behcet's disease
 - Sjögren's syndrome
 - IgA nephropathy (Berger's disease)
 - Post-streptococcal uveitis
 - Syphilis
 - Leptospirosis
 - Brucellosis
 - Tuberculosis
 - Drug-induced TINU: NSAIDs, Chinese herb *Goreisan*, acetaminophen, codeine phosphate, lamotrigine, smoking synthetic cannabinoid
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Treatment

- Nephritis responds favorably to systemic corticosteroids
 - Uveitis responds well to topical or regional steroids, but in recurrent cases systemic IMT is employed, including methotrexate, azathioprine, and cyclosporine
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Referral/Co-management

- Nephrology