AUCTORES
Globalize your Research

Journal of General Medicine and Clinical Practice

Mehmet Selim Mamiş *

Open Access

Case Report

A Rare Syndrome with Tubulointerstitial Nephritis: TINU Syndrome

Mehmet Selim Mamiş [1]*, Abdi Metin Sarikaya [2], İdris Kirhan [3]

[1] Siirt Training and Research Hospital, Department of Internal Medicine, Siirt, Türkiye.

[2] Harran University Faculty of Medicine, Department of Nephrology, Şanlıurfa, Türkiye.

[3] Harran University Faculty of Medicine, Department of Internal Medicine, Şanlıurfa, Türkiye.

***Corresponding Author:** Mehmet Selim Mamiş, Siirt Training and Research Hospital, Department of Internal Medicine, Siirt, Türkiye.

Received date: December 11, 2023; **Accepted date:** December 27, 2023; **Published date:** January 05, 2023

Citation: Mehmet S. Mamiş, Abdi M. Sarıkaya, İdris Kırhan (2023), A Rare Syndrome with Tubulointerstitial Nephritis: TINU Syndrome, *J. General Medicine and Clinical Practice.* 7(1); **DOI:10.31579/2639-4162/118**

Abstract

Tubulointerstitial nephritis (TIN) is a condition that can occur for different reasons and can lead to acute kidney injury or chronic kidney failure. Acute tubulointerstitial nephritis (ATIN) is a disease that involves both tubules and interstitium of the kidney parenchyma, mostly reversible and characterized by inflammatory cell infiltration (lymphocyte, monocytes and macrophages) in the tubulointerstitial area. There are 4 main causes of acute tubulointerstitial nephritis: drugs (75%), systemic diseases (10-15%), infections (5-10%), uveitis with tubulointerstitial nephritis (TINU) (5-10%) (1,2). Although the pathogenesis of acute tubulointerstitial nephritis is not clear, it is thought to be an autoimmune disease that develops as a result of the effects of both cellular and humoral immune mechanisms (4.5). ATN may therefore accompany other autoimmune diseases. Antigens that cross-react with kidney tubule cells and eye ciliary body epithelium are thought to be responsible for the initial pathogenesis of uveitis associated with tubulointerstitial nephritis (3). In this article, anterior uveitis syndrome with tubulointerstitial nephritis, which is rarely seen, is presented.

Kew Words: tubulointerstitial nephritis, uveitis

Case

25Y, F patient, symptomatic treatment was given to the patient who was examined in an external center due to the complaints of persistent weakness, nausea-vomiting, pain in the bilateral flank region, and urination at night. Nephrology outpatient clinic was recommended. A tru-cut fine-needle aspiration biopsy (FNAB) of the kidney was performed to find the underlying cause of the patient who was further examined in the outpatient nephrology outpatient clinic. As a result of microscopic examination, mononuclear leukocytes, monocytes, lymphocyte cell infiltration and edema were observed in the tubulointerstitial area and it was interpreted in favor of tubulointerstitial nephritis (TIN). About 4-6 weeks after FNAB, he applied to the Ophthalmology outpatient clinic with complaints of newly developing pain in the right eye, eye watering, redness and blurred vision. With the preliminary diagnosis of anterior uveitis and conjunctivitis, the patient was given local antibiotic therapy and local steroid drops. [(MAXIDEX 0.1% Sterile Ophthalmic Suspension (Dexamethasone), LOTEMAX 0.5% sterile ophthalmic suspension (Loteprednol etabonate), MOXAI® 0.5% eye drops (Moxifloxacin HCI)]. About 2 weeks after the eye complaints regressed with treatment, fatigue, nausea – He applied to our nephrology outpatient clinic with complaints of vomiting, pain in the bilateral flank region, and urination at night.In his anamnesis, the FNAB result of the kidney was interpreted in favor of TIN and the patient with anterior uveitis in the right eye had complaints of newly developed pain, redness and blurred vision in the left eye. Due to high creatinine and low glomerular filtration rate (eGFR), a diagnosis of TINU was made. Steroid drip was started for the treatment of uveitis and oral methylprednisolone was started for renal involvement and followed up.

Argument:

TINU syndrome is a rare subgroup of acute TINs. It is more common in children and especially in the young female age group. Most patients' initial complaints are non-specific, such as malaise, anorexia, fever, and weight loss; however, depending on the anatomical localization of the uveitis that develops in a significant part of the patients, ocular pain, watering, discomfort from light, redness, blurred vision, seeing floaters, and tubular dysfunction symptoms such as polyuria and nocturia can be seen [6]

Eye involvement in TINU syndrome is usually bilateral and 80% is anterior uveitis; however, posterior or panuveitis can also be seen. Anterior uveitis is one of the diagnostic criteria for TINU syndrome. Contrary to our case, ocular findings usually precede nephropathy; however, ocular and renal involvement may occur simultaneously [7–8]. While uveitis and TIN are seen simultaneously in 15% of cases; Ocular findings precede nephritis findings in 65% of cases [9]. In our case, nephropathy developed before eye

involvement. The definitive diagnosis of AIN can only be made by kidney biopsy [10]. There are no typical diagnostic tests for the diagnosis of TINU syndrome. In blood tests, anemia, neutrophil-dominated leukocytosis, mild albumin reduction, increased erythrocyte sedimentation rate, high c-reactive protein and increased β-2 microglobulin in the urine can be observed. Renal dysfunction is manifested by sterile pyuria, hematuria, and subnephrotic proteinuria as a result of complete urinalysis (TIT). Patients with renal involvement are characterized by a marked decrease in glycosuria, phosphaturia, and creatinine clearance as a result of tubular dysfunction [6]. Renal histologies show interstitial edema and polymor phnuclear leukocyte (PMNL) cell infiltration in the tubulointerstitial area. In acute TIN diseases, full cure can be achieved with early diagnosis and treatment. Treatment of TINU syndrome, a subgroup of acute TIN, is not clear; however, it is a benign disease that responds well to steroids in general. Kidney disease has been shown to have a better prognosis in children (10). After discontinuation of steroid treatments, uveitis recurs in nearly 50% of patients, and as a result of these relapses, chronic uveitis develops more frequently in pediatric patients than in adults [8]. Eye symptoms appear to be independent of kidney disease. Because renal functions improve unrelated to uveitis relapses [11].

The aim of treatment for eye symptoms is to reduce pain by suppressing inflammation in the eye and to prevent damage to the affected areas. Local steroids are used as the main element in the treatment; but local long-acting cycloplegics are also recommended. While the use of topical steroids in the form of drops is sufficient in anterior uveitis, systemic steroid therapy or injection into the orbital floor is recommended in posterior uveitis. For the treatment of renal involvement, it is recommended to administer prednisolone at a dose of 1 mg/kg/day for 8 weeks and then reduce the dose and discontinue it within 1 year. While spontaneous recovery is more common in children and adolescents without the use of corticosteroids, it is recommended that steroid use is required to prevent the development of end-stage renal disease in adults. There are also data on the use of mycophenolate mofetil in cases with TINU syndrome [12]. In patients with acute interstitial nephritis (AIN), the probability of recovery depends on the duration of kidney damage before diagnosis. Fibrotic changes occur 7-10 days after the onset of the inflammatory process. The main prognostic factor in AIN is the degree of interstitial fibrosis. Therefore, early diagnosis of AIN and initiation of steroid therapy reduces the development of chronic renal failure and is beneficial in terms of the return of renal functions [10].

Conclusion:

Because uveitis associated with systemic diseases can result in vision loss, they may have a life-threatening risk. In patients with pain, watering and sensitivity to light in the eyes, it is recommended to investigate for possible TINU syndrome in case of high creatinine or low eGFR. In case of any uveitis picture according to its localization, it should be kept in mind that it may be a component of autoimmune diseases or systemic diseases such as possible SLE, Behçet's Disease, Wegener's Syndrome, Sarcoidosis, Ankylosing Spondylitis, Rheumatoid Arthritis, considering the other clinical complaints of the patient. Uveitis may occur as the first manifestation of such autoimmune or systemic diseases. It should be kept in mind that untreated uveitis may cause vision loss and may progress to end-stage renal failure, albeit in a small number of untreated TINs. For this reason, being aware of the systemic effects of these diseases along with uveitis is important in terms of early diagnosis and treatment of these diseases.

Footnote: Informed written consent was obtained from the patient we presented in the case.

Author Contributions: Concept: M.S.M.; Design: M.S.M.; Supervision: A.M.S.; İ.K.; T.S.; Sources: M.S.M.; İ.K.; Literature review: M.S.M, A.M.S, İ.K, T.Ş; Writing the article: M.S.M, A.M.S, İ.K, T.Ş; Critical review: A.M.S, T.S.

Conflict of Interest: The authors have no conflict of interest.

Financial Disclosure: No financial support has been received for this study.

References:

1. Angela K, Nelson L, Anthony MV, et al. (2014). Biopsy-proven acute interstitial nephritis, 1993-2011: a case series. *Am J Kidney Dis*.
2. Schwarz A, Krause PH, Kunzendorf U, et al. (2000). The outcome of acute interstitial nephritis: risk factors for the transition from acute to chronic interstitial nephritis. *Clin Nephrol;* 54: 179-190.
3. Catalano C, Harris PE, Enia G, Postorino M, Martorano C, et all., (1989). Acute interstitial nephritis associated with uveitis and primary hypoparathyroidism. Am J Kidney Dis;14:317-318
4. Gafter U, Kalechman Y, Zevin D, Korzets A, (1993). Tubulointerstitial nephritis and uveitis: association with suppressed cellular immunity. *Nephrol Dial Transplant; 8*: 821-826.
5. Wakaki H, Sakamoto H, Awazu M. (2001). Tubulointerstitial nephritis and uveitis syndrome with autoantibody directed to renal tubular cells. *Pediatrics;* 107: 1443-1446.
6. Igarashi T, Kawato H, Kamoshita S, Nosaka K, Seiya K, et all., (1992). Acute tubulointerstitial nephritis with uveitis syndrome presenting as multiple tubular dysfunction including Fanconi's syndrome. *Pediatr Nephrol;*6:547-549
7. Levinson RD. (2008). Tubulointerstitial nephritis and uveitis syndrome. *Int Ophthalmol Clin;*48:51-59
8. Mandeville JT, Levinson RD, Holland GN. (2001). The tubulointerstitial nephritis and uveitis syndrome. Surv Ophthalmol*;*46:195–208. [PubMed] [Google Scholar]
9. Levinson RD, Mandeville JT, Holland GN, Rosenbaum JT(2000). Tubulointerstitial nephritis and uveitis syndrome: Recognizing the importance of an uncommon disease. *Am J Ophthalmol*;129:798-799
10. Türk Nefroloji Derneği TEMEL NEFROLOJİ Kitabı, ISBN: 978-975-277-778-1, Ostim/ANKARA 2019 Basım; sayfa:322.
11. Takemura T, Okada M, Hino S, Fukushima K, et all., (2000). .Course and outcome of tubulointerstitial nephritis and uveitis syndrome. *Am J Kidney Dis*; 35: 572.
12. Azar R, Verove C, Boldron A. (2000). Delayed onset of uveitis in TINU syndrome. J Nephrol.; 13: 381-383.
13. Filler G, Hansen M, LeBlanc C, Lepage N, Franke D, et all., (2003). J: Pharmacokinetics of mycophenolate mofetil for autoimmune disease in children. *Pediatr Nephrol;*18:445-449

DOI:10.31579/2693-7247/118