

este posible efecto adverso, y realicen análisis rutinarios con función renal, proteinuria (en orina de 24 h o en micción aislada con cociente proteínas/creatinina o cociente albúmina/creatinina) y sedimento de orina. Si hubiera alteraciones, remitir de forma preferente a nefrología, ya que el diagnóstico y tratamiento precoz es fundamental para el pronóstico renal.

### Financiación

Este trabajo no ha recibido ningún tipo de financiación.

### Conflicto de intereses

Los autores declaran no tener ningún conflicto de intereses.

### Agradecimientos

Agradecemos a los participantes del manuscrito su involucración y aportación en la investigación en el ámbito de la nefrología.

### BIBLIOGRAFÍA

1. Chessa E, Piga M, Floris A, Congia M, Cangemi I, Mathieu A, et al. Biologics and Targeted Synthetic Drugs Can Induce Immune-Mediated Glomerular Disorders in Patients with Rheumatic Diseases: An Updated Systematic Literature Review. *BioDrugs*. 2021;35:175–86.
2. Stokes MB, Foster K, Markowitz GS, Ebrahimi F, Hines W, Kaufman D, et al. Development of glomerulonephritis during

anti-TNF-alpha therapy for rheumatoid arthritis. *Nephrol Dial Transplant*. 2005;20:1400–6.

3. Hokama, Akira, Sonosaki T, Zamami R, Aoyama H, Kinjo T, et al. Crohn disease complicated by IgA vasculitis during therapy with tumor necrosis factor- $\alpha$  inhibitor. *Pol Arch Intern Med*. 2019;129:283–4.
4. Strobel T, Ahmed W, De la Sancha C, Bohm M, Fischer M. IgA Nephropathy in the Setting of Anti-TNF- $\alpha$  Therapy for Inflammatory Bowel Disease. *ACG Case Rep J*. 2020;7:e00462.
5. International Society of Nephrology. Kidney Disease Improving Global Outcomes (KDIGO) clinical practice guideline for glomerulonephritis. Chapter 2: Immunoglobulin A nephropathy (IgAN)/immunoglobulin A vasculitis (IgAV). *Kidney Int* 2021;100:S1-S276.

Silvia Sánchez Montero\*, Elena Monfa Guix, Mónica Sierra Ausín, Francisco Izquierdo García, Benjamín León Gómez, Caterine Vanesa Martínez-Rosero, Xhamy Yosue Martelli Guerrero, Erika Jenelia Romero Zaldumbide, Mario Alfredo Prieto Velasco, Cristina Lucas Álvarez, Aránzazu Sastre López y George Estifan Kasabji

Nefrología, Complejo Asistencial Universitario de León, León, España

\* Autor para correspondencia.

Correo electrónico: [sisanchezm@mail.ucv.es](mailto:sisanchezm@mail.ucv.es)

(S. Sánchez Montero).

0211-6995/© 2023 Sociedad Española de Nefrología. Publicado por Elsevier España, S.L.U. Este es un artículo Open Access bajo la licencia CC BY-NC-ND (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

<https://doi.org/10.1016/j.nefro.2023.02.007>

## Hodgkin lymphoma in a patient with kidney transplantation

## Linfoma de Hodgkin en un paciente con trasplante renal

Dear Editor,

Malignancy is detected three times more in kidney transplant (KT) recipients than general population. Posttransplant lymphoproliferative disorders (PTLD) constitute nearly 20% of malignancies diagnosed after solid organ transplantations. Even though Hodgkin lymphomas (HL) formerly defined as Hodgkin Disease are less common lymphomas after transplantation compared to general population (HL accounts 13% and 7% of lymphomas in general population and posttransplant recipients respectively), relative risk for HL is 2.6 among posttransplant patients compared to the risk among kidney disease patients on waiting list. The incidence of HL after kidney transplantation was approximately reported as 0.1%.<sup>1</sup> The

average age at diagnosis of posttransplant HL was found as  $48.6 \pm 11.9$  years with male predominance (55% of the cases).

A 35-year-old male patient had a history of kidney transplantation due to chronic kidney failure with unknown etiology 11 years ago in another center. He had COVID-19 infection two years ago. In addition, he was diagnosed with cytomegalovirus (CMV) disease eight months ago during evaluation for acute elevation in serum creatinine levels to 3.3 mg/dL and treated via i.v. ganciclovir by then (Fig. 1). The doses of tacrolimus and mycophenolic acid were also decreased. Kidney biopsy revealed chronic allograft nephropathy (Fig. 2). While these infections the patient had night sweats, fever, and weight loss. Splenomegaly was discovered by abdo-



### The Clinical Course of The Patient

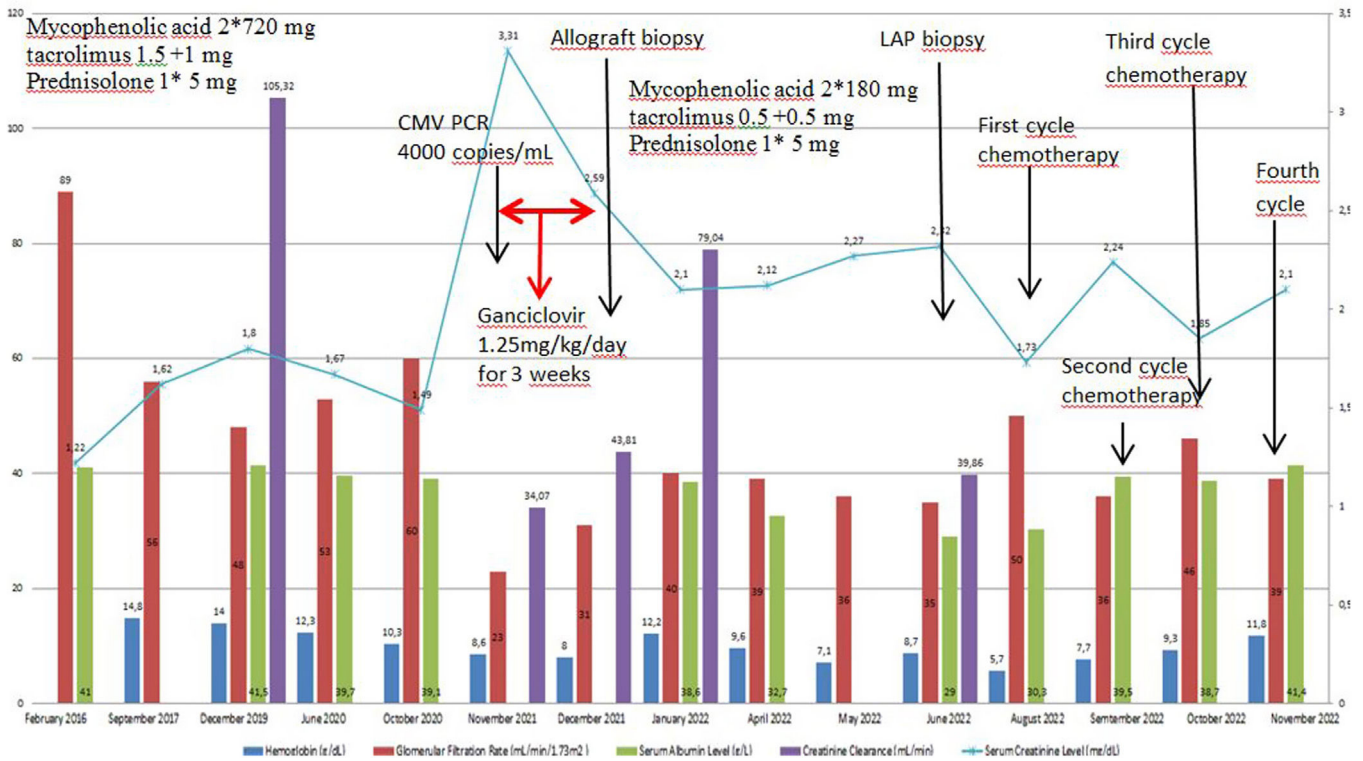


Fig. 1 – Clinical course of the patient.

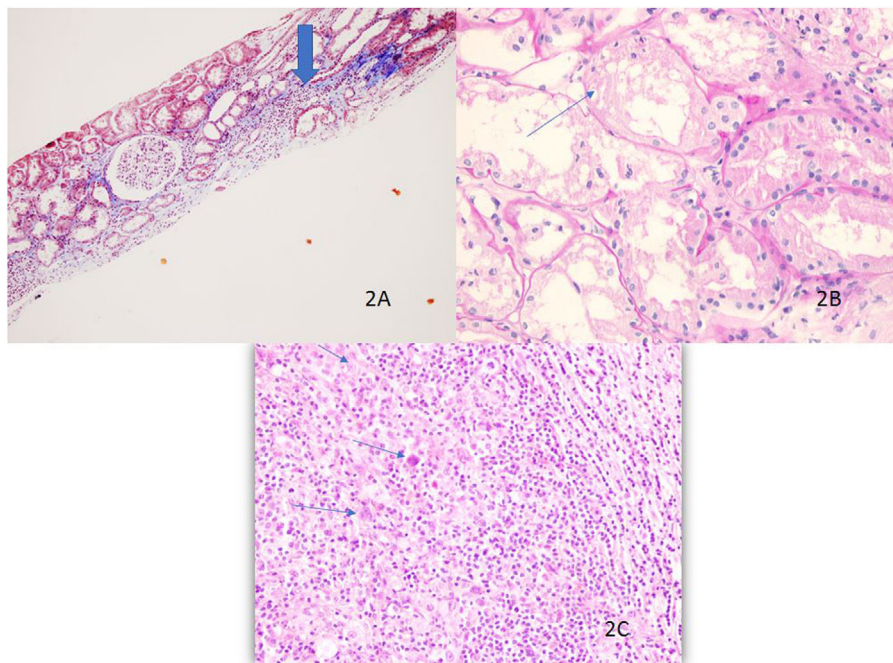


Fig. 2 – Allograft biopsy shows interstitial fibrosis, tubular atrophy and an area of inflammation (thick arrow) by light microscopy, masson trichrom  $\times 40$  (A), the presence of desquamation and necrosis in the tubule epithelium is shown (thin arrow) PAS  $\times 400$  (B), Hodgkin cells in the lymphoid background are indicated by arrows, H&E  $\times 400$  (C).

minal ultrasonography coincidentally. While exploring severe anemia (hemoglobin level: 5.7 g/dL), multiple lymphadenopathies (LAP) approximately 3 cm in size were detected by computed tomography. The patient had been diagnosed with nodular sclerosis classic HL (NSCHL) as the laparoscopic excisional biopsy of paraaortic LAP resulted in NSCHL (Fig. 2) with atypical cells positive for CD30, weakly positive for PAX5, but negative for PanCK, CD45, CD20, CD3, CD15, CD79a.

Our case had negative blood serology for EBV (monospot test for heterophile antibodies was not reactive) but Epstein-Barr Virus (EBV)-encoded small RNAs (EBER) were positive in lymph node biopsy by in situ hybridization. The patient was evaluated as stage 4 HL based on Ann Arbor staging system as the positron emission tomography (PET) revealed hepatic, splenic and vertebral involvement in addition to multiple LAP on both sides of diaphragm. Afterwards, tacrolimus dose was decreased and mycophenolate mofetil was ceased and the patient received three cycles of BV+AVD regime: doxorubicine (25 mg/m<sup>2</sup>), vinblastine (6 mg/m<sup>2</sup>), dacarbazine (375 mg/m<sup>2</sup>), and brentuximab (1.2 mg/kg). The control PET showed regression of the involvements. Kidney functions and hematological parameters were stable with serum creatinine level of 2.1 mg/dL and hemoglobin level of 11.7 g/dL. The above treatment regimen was planned to be completed to six cycles.

Generally, the incidence of post-transplant malignancy (PTM) was reported as 6% and this cancer risk for patients with KT was found to be 2–3 times more than general population.<sup>1</sup> Even though the most common malignancies diagnosed after solid organ transplantations were known as Kaposi sarcoma, non-melanomatous skin cancer (NMSC), and non-Hodgkin lymphoma (NHL), the incidence of these cancers after KT differ among countries such as lip cancer with the highest incidence in Austria, Canada, UK, USA, NMSC in Finland and Sweden, and NHL in China.<sup>1</sup> The incidence of HL was reported as 0.1% in the study conducted among 66,159 kidney transplant recipients between 1991 and 2000 in the United States. The risk ratio for HL in KT recipients was reported as 1.4 by univariate analysis and 2.7 by multivariable analysis. Still, the reported adult HL cases after KT are very few being less than 10, as far as we know.<sup>2</sup>

Although, calcineurin inhibitors (CNI) are well-known risk factors for the development of lymphoma after KT and reduction in immunosuppression (RIS) is needed in KT patients after the development of lymphoma, absence of CNI is an independent risk factor for allograft loss of these patients by leading to acute rejection. Instead of total cessation of CNI, decreased doses aiming for half of the trough levels (1.5–3.5 ng/mL) with continuing steroids and permanent interruption of anti-metabolites are recommended. We applied this regimen to our patient and his graft function has been stable without acute rejection episode.

In conclusion, we would like to emphasize the importance of targeting the appropriate CNI trough levels in KT patients, the awareness of carcinogenesis ten years after KT, searching for the appearance of lymphadenopathies and splenomegaly, reminding HL risk (although very rare) among KT recipients, and preserving the graft functions without acute rejection and HL progression.

### Ethics approval and consent to participate

Written informed consent was obtained from patient.

### Informed consent

Informed consent was obtained from the patient.

### Compliance with ethical standards

Authors have no conflicts of interest. No fund was taken.

### BIBLIOGRAFÍA

1. Cheung CY, Tang SCW. An update on cancer after kidney transplantation. *Nephrol Dial Transplant*. 2019;34:914–20.
2. Mohri T, Ikura Y, Hirakoso A, Okamoto M, Hishizawa M, Takaori-Kondo A, et al. Classical Hodgkin lymphoma type post-transplant lymphoproliferative disorder in a kidney transplant recipient: a diagnostic pitfall. *Int J Hematol*. 2018;108:218–27.

Kubra Kaynar<sup>a,\*</sup>, Tuba Ertekin<sup>b</sup>, Gizem Erdoğan Üreyener<sup>b</sup>, Sevdegül Mungan<sup>c</sup>, Harbi Abuhadwan<sup>b</sup>

<sup>a</sup> Department of Nephrology, Karadeniz Technical University, Faculty of Medicine, Trabzon, Turkey

<sup>b</sup> Department of Internal Medicine, Karadeniz Technical University, Faculty of Medicine, Trabzon, Turkey

<sup>c</sup> Department of Pathology, Karadeniz Technical University, Faculty of Medicine, Trabzon, Turkey

\*Corresponding author.

E-mail address: [kkaynar@yahoo.com](mailto:kkaynar@yahoo.com) (K. Kaynar).

0211-6995/© 2023 Sociedad Española de Nefrología. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

<https://doi.org/10.1016/j.nefro.2023.03.006>