An Early Cytomegalovirus Nephritis in Low Dose Thymoglobulin Induction in Cytomegalovirus Positive Kidney Transplant Recipient In Preemptive Therapy

Fu MS[1], WMR Wan Ahmad Kamil[1], SY Yee[1], MZ Abdul Wahab[1], R Yahya[1]

Nephrology Department, Hospital Kuala Lumpur

1. INTRODUCTION

The use of anti-thymocyte globulin (ATG) therapy is one of the risk factors for developing cytomegalovirus (CMV) disease. However there is no universal recommendations for CMV seropositive recipients who are undergoing low dose ATG induction treatment (R+/ ATG KTR) that use of universal prophylaxis over pre-emptive therapy in CMV-seropositive recipients receiving a kidney from a CMV-seropositive donor (D+R+).We present a case of early CMV nephritis in D+R+ recipient within 30 days post-transplantation by using pre-emptive therapy.

2. PRESENTATION

A Fifty-one year old man with end stage kidney disease (ESKD) due to diabetes mellitus(DM) underwent living-related ABO compatible kidney transplantation with normal immunological risk and intermediate CMV risk. He received early steroid withdrawal with low dose ATG as induction with the dose of 3.2mg/kg for total 3 days. He was discharged well at day 5 post-transplantation with Mycophenolate mofetil (MMF) 1g bd and tacrolimus with creatinine level of 101 mmol/L.The CMV viral load was monitored every 2 weeks.

He presented with hypoosmolar hyponatremia at D10 post-transplantation with a Sodium level of (Na) 122mmol/L and creatinine of 167mmol/L, associated with epigastric discomfort and vomiting. He responded well to intravenous antibiotic and drips with creatinine of 135mmol/L. At D18 post-transplantation, he was admitted again due to elevation of creatinine up to 225mmol/L without any signs or symptoms of infection or gastrointestinal (GI) loss. Allograft biopsy was done at D20, showed features of acute tubulointerstitial inflammation/nephritis with foci of suspicious viral cytopathic changes accompanied by intraluminal and peritubular neutrophilic infiltrates. Immunohistochemistry for CMV was positive. The CMV PCR at D21 showed 2229 IU/ml. The diagnosis of CMV nephritis was made. The oral valganciclovir was started and his kidney function had improved and back to baseline.

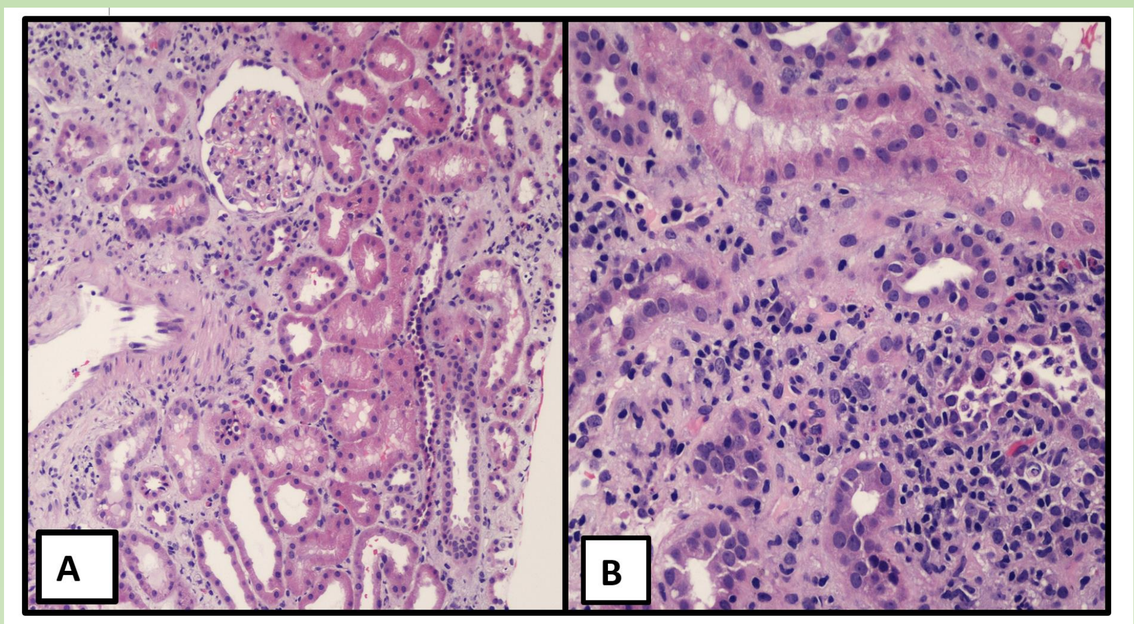

Figure 1: Light microscopy of kidney biopsy specimen (A & B). There is mild to moderate tubulointerstitial inflammation seen with normal looking glomeruli (A) Hematoxylin-eosin stain (H&E; original magnification, ×100) & (B) Hematoxylin-eosin stain (H&E; original magnification, ×200)

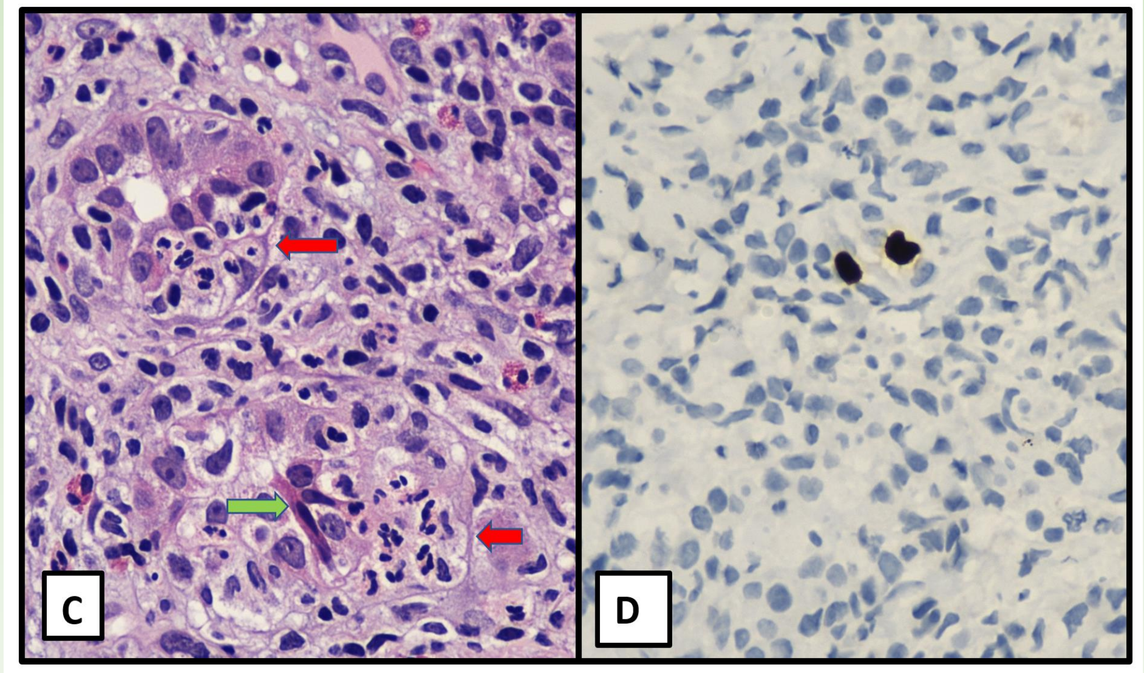

Figure 2: Light microscopy of kidney biopsy specimen (C) and CMV immunohistochemistry study (D). There are foci of neutrophilic cryptitis (red arrow) accompanied by enlarged tubular epithelial cells with eosinophilic cytoplasm and enlarged nuclei (green arrow) as seen in (C). Significant tubulointerstitial inflammation seen in (C) as well. In (D), CMV immunostain is positive (C) Hematoxylin-eosin stain (H&E; original magnification, ×400) & (D) CMV Immunohistochemistry (Original magnification, x400).

3. DISCUSSION

CMV infection usually occurs between 30 and 90 days after kidney transplantation. Early CMV nephritis is rare, however it is vital to keep an index of suspicion in high risk group and monitor CMV viral load early in pre-emptive approach in order to reduce the incidence.

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