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A multicenter evaluation of the diagnosis, management and outcomes of adenovirus enteritis infection following intestine or multivisceral transplant

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Severe Acute Rejection after Intestinal Transplantation Without Liver GraftMoon J¹, Iyer K¹¹Mount Sinai Medical Center

Introduction: Severe acute rejection (sAR) is one of the most refractory problems after intestinal transplantation (ITX). Unfortunately there is no effective treatment for sAR. Therefore understanding sAR and developing effective management strategies are critical.

Materials: We reviewed prospectively maintained database at a single center to describe characteristics of sAR and identify possible factors impacting on outcome. Study group included consecutive ITX between 2012 and 2020 without liver graft.

Results: There were 78 ITX without liver graft in 70 patients during the study period. Twenty one sAR were observed in 16 patients, which resulted in 11 graft losses. Incidence of sAR was 23% (16/70). Graft failure rate in sAR was 52% (11/21). Five patients died as a consequence of sAR. All 6 survivors underwent graft enterectomy and 5 had successful second ITX. Eight sAR were observed during the first year after ITX and 3 to 4 sAR occurred annually for the remaining follow-up period. Outcome of sAR was unaffected by Sex, ABO, cytomegalovirus or human leukocyte antigen match between donor and recipient; onset time of sAR; presence of stoma at the time of sAR; re-ITX; cross match at the time of ITX; calculated panel reactive antibody or donor specific antibody (DSA) at the time of sAR diagnosis. Advanced hepatic fibrosis with abnormal total bilirubin (>1.3 mg/dL) and poor renal function (GFR < 100 ml/min/1.73m²) showed correlation with graft loss ($p=0.072$, 0.038 , respectively).

Conclusions: sAR is a significant cause of graft loss and death after ITX. sAR develops frequently in the first year after ITX but also occurs during long term follow-up. Liver and kidney function at the time of sAR diagnosis seem to correlate but no clear risk factors predicts outcome of sAR. Second ITX for the patients who lost graft due to sAR is a viable option. Graft enterectomy is essential to avoid mortality related sAR when performed timely manner in selected patients.

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A Multicenter Evaluation of the Diagnosis, Management and Outcomes of Adenovirus Enteritis Infection Following Intestine or Multivisceral TransplantJafri S¹, Jafri S², Segovia M¹, Weiner J³¹Duke University University Medical Center, ²Henry Ford Hospital,³Columbia University Irving Medical Center

Introduction: Adenovirus Enteritis (AE) is a unique infection which can complicate patient course following intestine and multivisceral transplantation. Solid organ transplant patients have an increased risk for infection and intestine and multivisceral patients are unique in that they often develop inflammation from rejection in the intestine which might predispose to infection.

Methods: We reviewed patients who received an intestine transplant at three academic transplant centers between 2010 and 2020 for demographic, laboratory and clinical data.

Results: Five patients were identified with diagnosis of adenovirus enteritis. Three patients (60%) had isolated intestine transplant while two underwent multivisceral transplantation. Reason for transplant included trauma, volvulus, intestinal atresia and visceral neuropathy. All patients received induction with anti-thymocyte globulin (80%) or basiliximab. The initial diagnosis of infection occurred at a mean of 26.8 months following transplant (range 2-68 months). Diagnosis was by polymerase chain reaction (PCR) measurement in plasma (80%), intestine or stool. Cidofovir was used in 100% of cases as primary management. 40% of patients had reduction of immunosuppression at the time of diagnosis while the remainder did not. 60% of patients had rejection within a month prior to diagnosis. No patients had recurrent rejection in the month following treatment. Two patients had recurrent infection. No patients had graft loss or death within 6 months of infection. Two patients had enterectomy at a mean of 29.5 months after infection (range 22-37 months) Three patients died at a mean of 32 months following diagnosis (range 8-51 months).

Conclusion: We present a series of five cases of adult patients with AE following intestinal and multivisceral transplant. AE may arise due to immunosuppression, vascular compromise of the transplanted organ, or a combination of factors. Our study supported rejection as a risk factor for infection. Graft loss or death was not seen within 6 months following infection.