Primary infection with human herpes virus type 6, post-pediatric liver transplantation - a pathogen to remember

Adi Pappo-Toledano¹, Sara Dovrat², Zvia Soufiev², Yael Mozer-Glassberg^{3,4}, Irit Krause^{1,4}, Eran Rom^{1,4}, Raanan Shamir^{3,4}, Efraim Bilavsky^{1,4}

¹Department of Pediatrics C, Schneider Children's Medical Center, Petah Tiqva, Israel ²Central Virology Laboratory, Public Health Services Israel Ministry of Health, Chaim Sheba Medical Center, Tel Hashomer, Israel ³Institute for Gastroenterology, Nutrition and Liver Diseases, Schneider Children's Medical Center, Petah Tiqva, Israel ⁴Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel

BACKGROUND

In recent years, liver transplantation (LT) has become a well-accepted therapeutic modality for children with end stage liver disease, with transplantation surgery being performed at a younger age. Infection with human herpes virus 6 (HHV-6) occurs in most children within the first two years of life, therefore, data on primary HHV-6 infection in pediatric liver transplant recipients is scarce.

OBJECTIVE

To describe the course of primary HHV-6 infection after pediatric LT.

METHODS

Medical files, between the years 2015-2016, of post-LT pediatric patients with suspected primary HHV-6 infection were reviewed. Clinical and laboratory data for enrolled cases were evaluated. Primary infection was defined as DNAemia in children who were seronegative prior to transplantation or seroconversion from negative to positive IgG post- transplantation.

RESULTS

Four cases of primary HHV-6 (type B) infection were identified amongst the 26 children who had undergone LT at our center during the study period. All patients were <1 year old and presented with fever, hepatitis and elevated inflammatory markers, most (75%) within a short period post-transplantation. All were initially treated with empiric antibiotics for a suspected bacterial infection and 3 underwent liver biopsy, one showing signs of rejection. Three were treated with antiviral therapy with a gradual resolution of symptoms.

Characteristics of children with primary HHV-6 infection post-liver transplantation

No.	Age mo/sex	Indication for transplant	Living or Deceased Donor	Time to symptoms	HHV-6 detection	Seroconversion	Clinical and laboratory presentation	Type	Rejection or PTLT	Treatment	CMV Prophylaxis
1	6/F	BA	Living	POD23	Plasma and whole blood PCR	Yes	Fever, Elevated LF	B	Acute cellular rejection	Abx, GCV, IV steroids	VGCV
2	8/M	MSUD	Deceased	POD15	Plasma and whole blood PCR	Yes	Fever, Diarrhea, Elevated LF	B	no	Abx, GCV	VGCV
3	8.5/M	BA	Living	POD242	Plasma and whole blood PCR	Yes	Fever, Pharyngitis, Elevated LF	B	no	Abx	Non
4	6/M	BA	Living	POD54	Plasma and whole blood PCR	Yes	Fever, Pharyngitis, Rash, Diarrhea, elevated LF	B	PTLT, no rejection	Abx, VGCV twice daily	VGCV

No. number; PTLT, post-transplant lymphoproliferative disease; BA, biliary atresia; POD, post-operative day; LF, liver functions; ABX, antibiotics; GCV, Ganciclovir; VGCV, Valganciclovir; MSUD, maple syrup urine disease.

DISCUSSION

Primary HHV-6 should be taken into account in young children shortly after LT, especially when presenting with fever and elevated liver enzymes. Treatment with anti-viral therapy should be considered.

CONCLUSION

In young infants post-LT, a high index of suspicion may promote early detection of HHV-6 primary infection and prevent serious complications.