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Abstract Previews:

Topic: 3 Comorbidities, Infections and Complications

Title: Risk factors and impact of bacterial and viral infections in pediatric liver transplant recipients: single center experience

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Text: **Background and aim:** Infections after liver transplantation (LT) are recognizable risk factors for morbidity and mortality. The aim was to identify risk factors and impact of bacterial and viral infections after LT.

Patients and methods: Nighty-six children transplanted between 2017-2018 at Pediatric Liver Center at Kings College Hospital were reviewed. The incidence of bacterial and viral infections was calculated, and risk factors were analyzed. Risk factors included age, presentation, pre and posttransplant infections, donor (D) and recipient (R) CMV IgG, rejection, immunosuppression, posttransplant complications, hospital stay and donor factors (age, donation after cardiac death (DCD) or brain death (DBD), graft type, partition).

Results: Thirty percent of patients had proven bacterial infection; bacteremia (N=11), intraabdominal infection (N=7) were the commonest. The most common pathogens were *Enterococcus faecium* (50% Vancomycin resistant enterococcus) and coliforms. Median intensive care and overall hospital stay were longer in patients who developed bacterial infections (p-value 0.015, 0.000). Auxillary graft, EBV viremia and use of sirolimus were significant risk factors for bacterial infection (p-values 0.023, 0.003, 0.025). The incidence of EBV viremia was 60.4%, CMV infection 35.4% and other viruses 30% predominantly adenovirus and rhinovirus. Younger recipient age, D+R- CMV IgG and left lateral segment graft were significant risk factors for CMV infection (p-value 0.021, 0.000, 0.005). On the contrary, D-R- CMV IgG and none-split grafts had less risk for CMV infection (p-value 0.000, 0.024). Older donor age, auxillary graft and bacterial infections were significant risk factors for EBV infection (p-value 0.009, 0.025, 0.003). Pretransplant viral infections were risk factors for non-EBV/non-CMV viral infections.

Conclusion: Bacterial and viral infections are common after LT. Risk factors varies according to type of infection. However, the graft type and immunosuppression have significant impact on type of developing infection. Only bacterial infections were associated with increased morbidity but no impact on mortality.

Preferred Presentation Type: No preference

Topic: 9 Pediatrics

Title: Practical utility of serum ammonia in children with acute liver failure; a biomarker of outcome

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Text: **Background and aim:** Hyperammonemia is a recognized phenomenon in acute liver failure (ALF); however, the cutoff value to predict the outcome has not been established. Our aim is to establish a cutoff value of serum ammonia in ALF children to predict their outcomes while conventional UK liver transplant listing criteria were applied.
Methods: We reviewed 55 ALF patients; 28 were transplanted and 27 survived without liver transplant. They were managed at the Pediatric liver center at King´s College Hospital from 2014 to 2018; inherited defects of ammonia metabolism were excluded. Peak ammonia levels were analyzed in all patients and compared between patients who had a liver transplant and who survived with their native livers. Ammonia was compared as well between encephalopathic and non-encephalopathic patients.
Results: The median (IQR) peak ammonia level during admission was 99.5 (69-142.75) umol/L. Sixty-three percent of patients developed encephalopathy; 32.7% had grade 3 and 4. Encephalopathy was common in patients who required liver transplant than who survived without transplant (p-value 0.004). Median peak ammonia levels were significantly higher in encephalopathic patients (115 umol/L) than non-encephalopathic (67 umol/L) (p-value 0.001). Ammonia value of 80.5 umol/L predicted encephalopathy with 75% sensitivity and specificity. Twenty percent of patients went on continuous renal replacement therapy (CRRT); the median percent decrease in ammonia after CRRT was 38%. Median peak ammonia levels were higher in patients who required transplantation (142 umol/L) versus who survived without transplant (71 umol/L) (p-value 0.000). Ammonia level of 140 umol/L was deleterious; it predicted the need for transplant with 100% specificity and 52% sensitivity.
Conclusion: Ammonia level over 80 umol/L is a predictor of encephalopathy in young children and values more than 140 is 100% specific in predicting need for liver transplantation when used in conjunction with other predictors of need for liver transplantation in ALF children.

Preferred Presentation Type: Oral Presentation