Post-transplant lymphoproliferative disease (PTLD) among heart transplanted children in Gothenburg 1989-2014 (25 years)

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Introduction

Heart transplantation has been an option for children in Sweden since 1989. The immunosuppressive treatment, carries an increased risk for malignancies, the most common type being lymphoma, post-transplant lymphoproliferative disease (PTLD). As our institution faced an increased rate of PTLD among heart transplanted children, the objective of this study was to analyze the rate of PTLD over time and to identify possible risk factors.

Epstein-Barr virus infection = ”kissing disease”

Methods

This is a retrospective study of all heart transplanted children (0-18 years of age) in Gothenburg from 1989 to 31 December 2014.

	No PTLD (n=60)	PTLD (n=11)
Gender		
male	34 (57)	8 (73)
female	26 (43)	3 (27)
Age at transplantation	10 (0,06-17)	10(0,25-16)
Post-transplant follow-up (years)	10 (0,04-25)	6 (0,4-21)
Listing diagnosis		
CHD	24 (40)	11 (100)
Cardiomyopathy	36 (60)	0
EBV-negative at HTX[1]	21/51 (41)	8/9 (89)
Dead	15 (25)	5 (45)
Induction treatment		
Thymoglobine	37 (62)	4 (36)
ATG-Fresenius	23 (38)	7 (64)

Data presented as median (range) or count (%). PTLD=posttransplant lymphoproliferative disorder, CHD=congenital heart disease.
[1]Denominator reflects number of patients with data available.

Conclusions

All subjects developing PTLD had congenital heart defects, the majority hypoplastic left ventricle, and all had undergone sternotomy before transplantation.

The incidence of PTLD was 15% (11/71), with a tendency to increase during later years.

Results

A total of 71 children underwent heart transplantation. The overall incidence of PTLD was15% (11/71), however 20% (9/44) of those being heart transplanted after 2001 developed lymphoma, compared to 7% (2/27) transplanted before 2001. Median age at transplantation was 10 years (0-17), equally for subjects developing PTLD, post-transplant follow-up time was 10 years (0-25) for those who did not develop PTLD, compared to 6 years (0-21) in the PTLD-group. In the group that developed PTLD, listing diagnosis was exclusively surgically palliated congenital heart defects with an overweight for hypoplastic left ventricle. Induction therapy with ATG-Fresenius was twice as common among those who developed PTLD and the majority (8/9) was seronegative for Epstein-Barr virus (EBV) at heart transplantation.

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