Characteristics and outcome of biopsy-proven post-transplant lymphoproliferative disorders after solid organ transplantation: a real life picture anno 2020.

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TEXT

Background: Posttransplant lymphoproliferative disorder (PTLD) is a rare but life-threatening complication, occurring after solid organ (SOT) or hematopoietic stem cell transplantation. Since PTLD is a rare disease and prospective data is scarce, monocentric retrospective data remain essential for characterizing the disease.

Objectives: This retrospective, monocentric trial aims to collect data regarding incidence, patient-related characteristics, transplant-related characteristics, disease-related characteristics, prognostic scores and outcome parameters in patients with PTLD after SOT.

Methods: Adult and pediatric SOT recipient with biopsy-proven PTLD at the University Hospitals Leuven from 1989 to 2019 were identified. For each subject patient-, transplant- and disease related data and outcome parameters were recorded and retrospectively analyzed. Kaplan-Meier estimates were used to create survival curves for overall survival (OS) and relapse-free survival (RFS).

Results: One-hundred and sixty three cases of biopsy proven PTLD after SOT were identified.

Demographics: Overall incidence for all types of SOT was 2.6%. Median age at diagnosis of PTLD was 54.7 years (range 3.5-83 years) with a male predominance (n/N=113/163, 69.3%) in our cohort. Median time from transplant to PTLD diagnosis was 4.8 years (range 0.23 – 28 years), with most PTLD's occurring late (>1 year after transplantation) (n/N=129/163, 79.1%). The type of transplanted organ was kidney (n/N=67/163, 41.1%), heart (n/N= 30/163, 18.4%), Lung (n/N=27/163, 16.6%), Liver (n/N=27/163, 16.6%) or multi-organ (n/N=12/163, 7.4%). Most cases were monomorphic (n/N= 136/163, 83.4%), with DLBCL as most frequent subtype (n/N=102/163, 62.6%). EBV ISH was positive in most cases (n/N=90/150, 60%), as expected the number of positive EBV ISH was higher in early PTLD cases (87.5%) compared to late PTLD (52.5%). At diagnosis most patients presented with stage IV disease (n/N= 91/155, 58.7%) and extranodal involvement (n/N=131/163, 80.4%). About half (n/N=82/163, 50.3%) of the patients received classical triple immunosuppressant therapy (combination of calcineurin inhibitor, antimetabolite and low dose steroids) at the time of diagnosis.

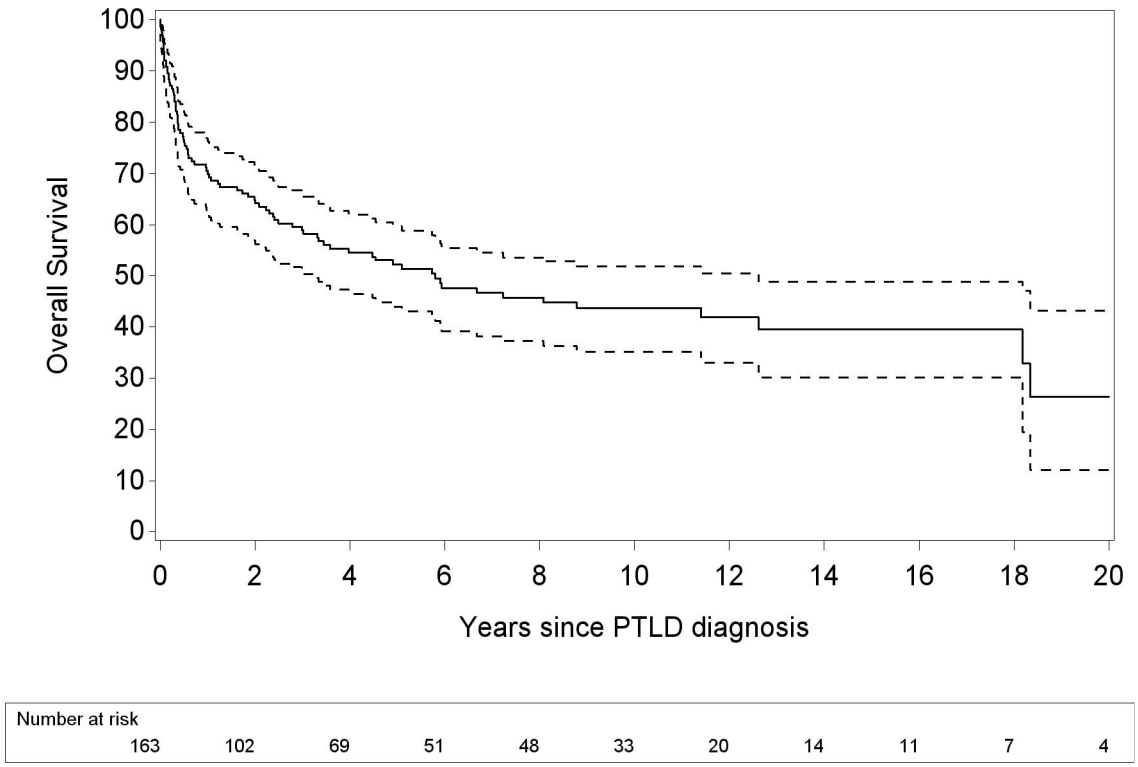
Therapy and outcome: Initial therapy included reduction of immune suppression (n/N=151, 92.6%), rituximab (n/N=95/163, 58.3%), surgery (n/N=24/163, 14.7%), radiotherapy (n/N=13/163 , 8%), chemotherapy (n/N=40/163, 24.5%), antiviral treatment (n/N=5/163, 3.1%) or high dose corticosteroids (n/N=7/163, 4.3%). The limited use of rituximab can be explained by the PTLD's treated in the pre-rituximab era. Following initial therapy the rates of complete response (CR), partial response (PR), stable disease (SD) or progressive disease (PD) were 54%, 12.9%, 5.5% and 19% respectively. Eleven patients (n/N=11/163, 6.7%) died during first line treatment. Three patients (n/N=3/163, 1.8%) received supportive care only. OS rates for the whole cohort at 1, 5 and 10 years was 70% (95% confidence interval (CI) 64-75), 52 % (95% CI 46– 58) and 44% (95% CI 38-49) respectively. At last follow-up 75 patients were alive and 88 patients had died. Cause of death was PTLD related in 39 cases (44%). RFS (of patients in CR) at 1, 3 and 5 years was 86% (95% CI 78-92), 68% (95% CI 59-76), 59% (95% CI 50-66) (**Figure 1**).

Conclusion: We report the retrospective analysis of 163 cases of PTLD after SOT, to our knowledge one of the largest single-institution cohorts published in literature.

IMAGES

Figure 1: Kaplan Meier plots for overall survival in patients with Posttransplant lymphoproliferative disorder (A) and relapse free survival after achievement of complete remission (B).

A.



B.