Post-transplant lymphoproliferative disorder (PTLD) in adult kidney transplant patients: a British Columbia experience

Erin Ready, B.Sc.(Pharm); Kseniya Chernushkin, B.Sc.(Pharm), ACPR; Nilufar Partovi, PharmD, FCSHP; Trana Hussaini, PharmD; Yuhua Sun, MD; Cindy Luo, B.Sc.(Pharm), ACPR; Laurie Sehn, MDCH, MPH; Olwyn Johnston, MD; R. Jean Shapiro, MD, FRCPC

Background

- Immunosuppression following kidney transplantation is known to increase the risk of malignancy; PTLD is the second most common malignancy affecting kidney transplant patients, with a reported prevalence of 1-2%[1,2]
- PTLD is associated with poor patient and graft survival
- Beyond reducing immunosuppressant therapy, there is a lack of consensus regarding optimal PTLD management

Objective

- To characterize PTLD in kidney transplant patients in BC with regards to incidence, patient and graft survival, histological subtypes, treatment modalities, and management of immunosuppression

Methods

- **Design:** retrospective cohort study
- **Data sources:** BC Transplant database, BC Cancer Agency (BCCA) database, electronic chart review
- **Inclusion criteria:** adult patients identified by BCCA database as having had a diagnosis of PTLD following a kidney transplant in BC between the years 1996-2012
- **Exclusion criteria:** multiple organ transplant recipients, age <18 years at time of first kidney transplant

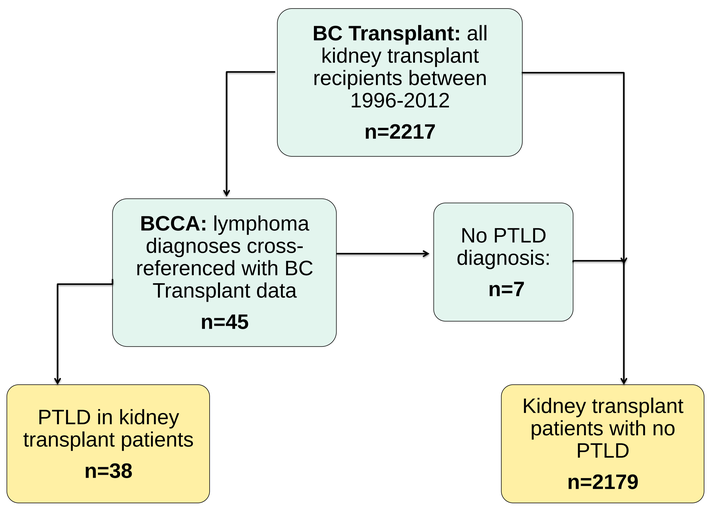

Figure 1: Flowchart identifying cohort of kidney transplant patients who developed PTLD between 1996-2012, and those who did not.

Characteristic	PTLD n=38 n (%)	No PTLD n=2179 n (%)
Male	24 (63.2)	1330 (61.0)
Mean Age at Transplant, Years (Range)	47 (18-70)	49 (18-80)
Mean Age at PTLD Diagnosis, Years (Range)	52.4 (19-78)	N/A
Caucasian	27 (71.1)	1437 (65.9)
EBV Mismatch	6 (15.8)	100 (4.6)
Induction Therapy		
Anti-IL-2-Receptor Antibodies	19 (50.0)	1259 (57.8)
ATG	2 (5.3)	270 (12.4)
OKT3	1 (2.6)	39 (1.8)
Missing Data	16 (42.1)	611 (28.0)
Prednisone Rx at Discharge	28 (73.4)	1280 (58.7)

Table 1: Demographic data of kidney transplant patients who developed PTLD (n=38) and those who did not (n=2179).

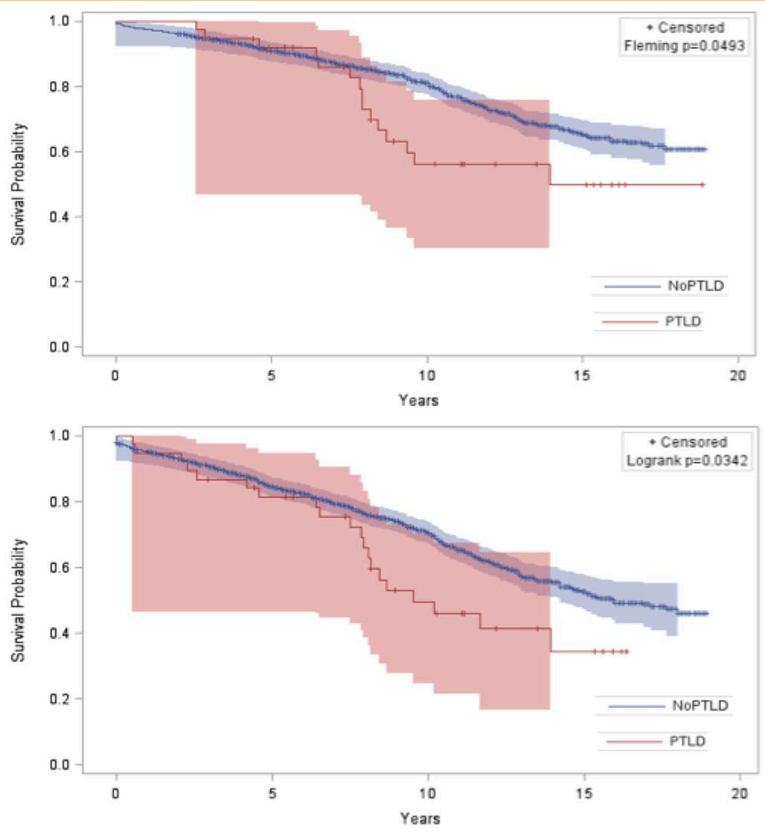

Figure 2: Kaplan-Meier survival analysis of overall patient survival (top) and graft survival, uncensored for death (bottom).

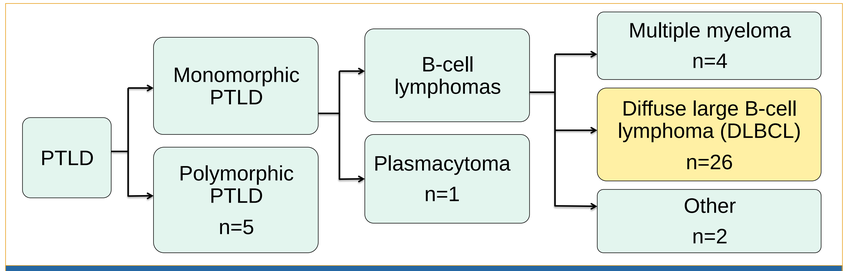

Figure 3: Breakdown of PTLD by histological subtype.

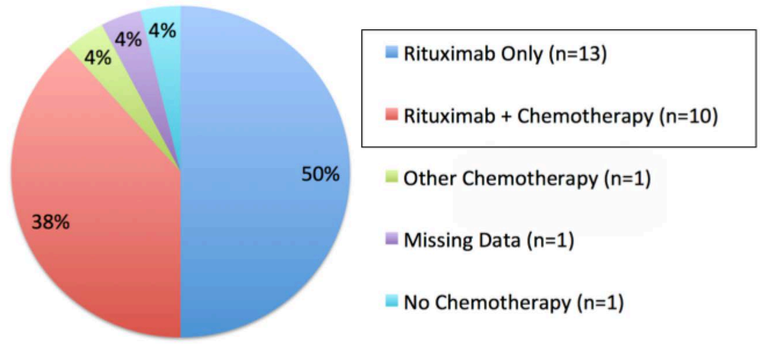

Figure 4: Medical management of PTLD – diffuse large B-cell lymphoma (n=26).

Total Incidence of PTLD	1.7%	
1-Year PTLD Survival Rate	All PTLD: 78.9%	
	Early-onset: 100%	Late-onset: 70.4%
2-Year PTLD Survival Rate	All PTLD: 76.3%	
	Early-onset: 100%	Late-onset: 66.7%
Median Graft Survival	PTLD: 9.5 years	No PTLD: 16 years

Table 2: Observed incidence of PTLD during study period, 1-year and 2-year survival rates following early- and late-onset PTLD diagnosis, and graft survival.

Limitations

Retrospective, observational design; incomplete database reporting; database reporting standards of practice not consistent over time period studied.

Conclusions

Rates of PTLD in British Columbia following kidney transplantation are low and consistent with rates reported by centres in other parts of the world. PTLD significantly decreases overall patient and graft survival. Beyond immunosuppressant therapy reduction, PTLD treatments are variable, reflecting the heterogeneity of the disorder.

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1.Quinlan SC, Pfeiffer RM, Morton LM, Engles EA. American Journal of Hematology. 2011; 86(2): 206-209.
2.Allen UD, Preiksaitis JK, AST Infectious Diseases Community of Practice. American Journal of Transplantation. 2013; 13: 107-120.