

## INTRODUCTION

- Vascular complications are common following pediatric liver transplantation<sup>1</sup> (PLT)
- An incidence of up to 10% for portal vein thrombosis (PVT) and 25% for hepatic artery thrombosis (HAT)<sup>2</sup> has been reported.
- We aimed to analyze the incidence and factors associated with thrombotic complications after PLT at Children's Hospital Los Angeles

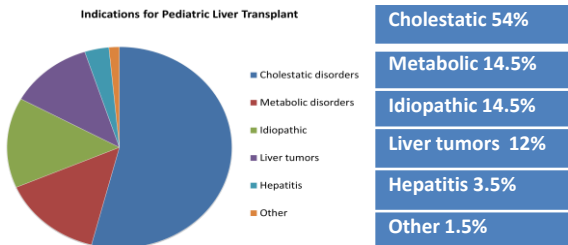
## METHODS

- After IRB approval, we retrospectively reviewed records of 156 consecutive patients who underwent PLT from 2000 to 2015.
- Demographic, perioperative and outcome data collected.
- Thrombosis was identified through chart review as well as imaging including ultrasound, Doppler or CT scan up to 1 year after surgery
- A univariate logistic regression was done for individual variables.
- We utilized Firth penalized logistic regression to reduce bias due to small sample size

## RESULTS

- A total of 156 PLTs, 14 concurrent with other organs.
- 142 cases of PLTs were included in the study
- The average ICU length of stay was 170 hours (range 12-635) with 2 postoperative deaths

## RESULTS



- Of the 142 patients, PVT was noted in 5 (3.5%) and HAT in 1 patient (0.7%) (Table 1)
- No correlation with length of surgery, PELD scores, amount and type of blood products given and immediate post-operative coagulation status.

	Diagnosis	Type of transplant	Donor type	Complication	Type of anastomosis	Other
Patient 1	Hepatoblastoma	Split graft - left lateral segment	Cadaver	Portal vein thrombosis	End-to-end	
Patient 2	Fulminant hepatic failure	Split graft - left lateral segment	Living	Hepatic artery thrombosis	End-to-end	
Patient 3	Biliary atresia	Split graft - left lateral segment	Living	Portal vein thrombosis	End-to-end	
Patient 4	Biliary atresia	Split graft - left lateral segment	Cadaver	Portal vein thrombosis	End-to-end	
Patient 5	Hepatoblastoma	Whole organ	Cadaver	Portal vein thrombosis	End-to-end	PVT in native liver prior to transplant
Patient 6	Biliary atresia	Split graft - left lateral segment	Living	Portal vein thrombosis	Use of graft due to size discrepancy	Atretic native portal vein

Table 1

## DISCUSSION

- Although thrombotic events occur less frequently than bleeding complications after PLTs, they threaten patient and graft survival<sup>3-4</sup>
- We found that 60% of PVTs (3/5) were associated with biliary atresia
- PVT and HAT are known to occur more commonly in children as compared to adults due to smaller caliber of vessels, split procedures, and involuntary development of high hematocrit<sup>4</sup>
- Other factors associated with PVT include size discrepancy between the donor and recipient vasculature, anastomotic kinks, low portal flow, and the presence of preoperative PVT<sup>3,4</sup>
- Our practice is to anticoagulate with Heparin and/or Dextran 40, when end-to-end anastomosis is performed under surgical guidance
- While this could contribute to the lower incidence of PVT and HAT at our center, we also strive to maintain a post-operative hematocrit below 30 and INR between 1.5-2
- In addition, consistency in surgical team and technique were other favorable factors at our center.

## REFERENCES

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