

# Liver Transplant Publication Brief

## Clinical Relevance of Adapting Portal Vein Flow in Living Donor Liver Transplantation in Adult Patients<sup>1</sup>

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### INTRODUCTION

Graft size mismatch is a major concern in adult living donor liver transplantation because hyperperfusion to the newly grafted liver is considered the main factor leading to graft dysfunction and poor survival. In this paper the authors describe the clinical significance of modifying graft inflow by ligating the splenic artery to prevent "Small-for-Size Syndrome (SFSS)" in adult living donor liver transplants (ALDLT) and preventing its accompanying complications.

### STUDY

Portal venous and hepatic arterial flow measurements were compared: pre-transplant in the donor and then post-transplant in the recipient as follows.

### REPORTED RESULTS

VESSEL	FLOW: DONORS ONSET OF HILAR DISSECTION	FLOW: RECIPIENTS AFTER REPERFUSION & BILIARY ANASTOMOSIS	HEPATIC-PORTAL RATIO	
			PRE-TRANSPLANT	POST-TRANSPLANT
PORTAL VEIN	712 ± 172 ml/min	2,100 ± 1,153 ml/min	30/70	6/94
HEPATIC ARTERY	104 ± 62 ml/min	202 ± 102 ml/min		

After reperfusion, recipient portal venous blood flow was three times greater than that in donors. In recipients, hepatic arterial blood flow doubled from that of donors. The portal venous blood flow contribution to the liver graft flow increased from 70% to 94%. Statistically significant higher portal flow in some patients mandated a graft inflow modification procedure which reduced total portal flow from 2,600 ± 832 ml/min to 1,700 ± 689 mL/min.

### STUDY'S CONCLUSION

An increase in portal blood flow is commonly observed after reperfusion in standard cadaver liver transplantation. In ALDLT, these hemodynamic changes seems more pronounced. The study confirms that poor outcome is associated with graft hyperfusion and that the portal venous flow in the recipient should be lowered when graft to recipient body weight ratio (GRBWR) < 0.8 is accompanied by portal inflow of > 250 mL/min/100g graft weight.

### TAKE HOME POINTS

This paper demonstrates that flow measurements are important in determining liver donor/recipient graft mismatch in order to decide whether measures should be taken to moderate a mismatch by ligation of the splenic artery or other shunt procedures.

### REFERENCES

<sup>1</sup>Troisi, R., de Hemptinne, B., "Clinical Relevance of Adapting Portal Vein Flow in Living Donor Liver Transplantation in Adult Patients," Liver Transplantation 2004;9(9)Suppl 1 pp S36-S41.