

# Liver Transplant Focus Note

## Key Liver Transplant Publications

Since the onset of liver transplantation in the 1960s, an extensive body of hepatic blood flow literature has developed. A number of technologies have been used to measure or estimate hepatic and portal blood flows including Xenon CT, transesophageal echography, [150] water and positron emission tomography (PET), electromagnetic flowmetry and ultrasound transit-time flowmetry. A few major liver transplant flow studies are listed below.

### **Does Intraoperative Hepatic Artery Flow Predict Arterial Complications after Liver Transplantation?**

Abbasoglu O, Levy M, Testa G, Obiekw S, Brkic BS, Jennings LW, Goldstein RM, Husberg BS, Gonwa TA, Klintmalm GB., Transplantation 1998; 66(5) 598-601. Baylor Univ. Medical Services. [Review of 411 consecutive OLT in 367 adult patients between November 1992 and August 1995; Conclusion: Hepatic artery flow measurement should be obtained at the time of OLT and may help predict early \(but not late\) post transplant stenosis or thrombosis. Patients with HA flows < 400 ml/min may carry a higher risk of complications. \(electromagnetic flowmetry\)](#)

**Arterial Blood Flow Predicts Graft Survival in Liver Transplant Patients," Impaired hepatic arterial blood flow after reperfusion along with primary non-functioning organ (PNF) are significant predictors of increased graft injury and is associated with diminished long-term graft survival.** Pratschke S, Meimarakis G, Mayr S, Graeb C, Rentsch M, Zachoal R, Bruns CJ, Kleespies A, Jauch K-W, Loehe F, Angele MK, Liver Transplantation 2011; 17: 436-445. [Conclusion: Intraoperative transit time ultrasound flow measurements of the hepatic artery may allow identification of organ transplants at risk for poor outcomes. \(Transonic Reference # 9537AHM\)](#)

### **Clinical Relevance of Adapting Portal Vein Flow in Living Donor Liver Transplantation in Adult**

**Patients,** Troisi R, Hemptinne B, Ghent University Hospital, Ghent, Belgium, Liver Transplantation 2004 9(9) S36-41. Volumetric liver blood flow and galactose clearance concurrently measured during live transplant. [Conclusion: Flow measurements are important in determining liver donor/recipient graft mismatch in order to decide whether measures are needed to moderate a mismatch by ligation of the splenic artery or other shunt procedures. \(transit time ultrasound flowmetry\)](#)

### **The Interrelationship between Portal and Arterial Blood Flow after Adult to Adult Living Donor Liver Transplantation,**

Marcos A, Olzinski AT, Ham JM, Fisher RA, Posner MP, Transplantation 2000: 70(12) 1697-1703. Univ. of Rochester, NY, Medical College of VA, Richmond. Quantitation of liver blood flow to right lobe grafts before and after transplantation and to the hemodynamic changes in early posttransplant and to the interrelationship of arterial and portal blood flow and their association with graft mass and function. [Conclusion: The hemodynamic pattern after right lobe transplantation is predictable and intraoperative measurements and ultrasonography are useful for monitoring. The size of the graft influences the magnitude of hemodynamic changes. \(electromagnetic flowmetry\)](#)

**Intraoperative Measurement of Graft Blood Flow - a Necessity in Liver Transplantation,"** Rasmussen A, Hjortrup A, Kirkegaard P, Transpl Int. 1997: 10(1) 74-7. Univ. of Copenhagen, Denmark. Portal and hepatic arterial flow was measured intraoperatively in 70 patients. Impaired graft flow due to vascular abnormalities was detected in six patients. [Conclusion: ...the causes of primary graft dysfunction due to technically flawed reperfusion of the graft can be identified and alleviated by intraoperative measurement of the flow in graft vessels. \(transit-time ultrasound flowmetry\)](#)

### **Hemodynamic during Liver Transplantation: The Interactions between Cardiac Output and Portal Venous and Hepatic Arterial Flows.**

Henderson JM, Gilmore GT, Mackay JI, Galloway JR, Dobson TF, Kutner MH, Hepatology 1992; 16(3):715-8. Emory University, Atlanta, GA, Liver blood flows were measured in 34 patients after liver transplantation. [Conclusion: Increased flow in the newly transplanted liver is predominantly portal, is associated with high CO and reduced hepatic flow. \(transit-time ultrasound flowmetry\)](#)