ILTS

International iLDLT Group
Living Donor Liver Transplantation

LTSI

CONSENSUS CONFERENCE 2023

CHENNAI, INDIA, JANUARY 27, 2023

IN ASSOCIATION WITH: MCLD 2023, JANUARY 28, 2023
ROBOTIC DONOR HEPATECTOMY WORKSHOP, JANUARY 29, 2023

Prediction and Management of Small for Size Syndrome in LDLT

PROGRAM

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INTRODUCTION

The volume of the liver graft is a critical metric for graft and patient survival in living donor liver transplantation (LDLT). First described in 1999, allografts with a graft to recipient weight ratio (GRWR) less than 0.8 or a ratio of graft volume to standard liver volume (GV/SLV) less than 40% are widely regarded as small-for-size grafts (SFSG). These grafts have a higher risk of developing early allograft dysfunction (EAD). When SFSG are unable to meet the functional demands, the recipients may develop a so-called small-for-size syndrome (SFSS). The term SFSS however has been used to describe a variety of clinical presentations ranging from mild hepatic dysfunction with isolated hyperbilirubinemia to irreversible graft failure leading to death in the absence of re-transplantation. The differentiation between SFSS and other etiologies of EAD is also not straightforward. Diverse terminology, and dogmatic preconceptions have also led to a poor recognition of SFSS.

It is not always a GRWR less than 0.8 which results in SFSS. It is more importantly a state of relative portal hyperperfusion (portal hyperperfusion syndrome or small-for-flow syndrome) resulting in a cascade of microcirculatory changes. A plethora of other factors apart from graft volume can lead to a relative insufficiency of graft size. Over the past decade, there have been tremendous insights into portal hemodynamics and its influence on post-LT outcomes. However, numerous aspects of the ultrastructural mechanics, microscopic changes and the inter-play of protective and deleterious factors which tilt the balance from normal liver regeneration to SFSS in SFSGs remain undefined.

The safety of the donor remains paramount in LDLT, and a clear judgment is needed to balance the donor risk vs the recipient benefit, satisfying the tenet of "double equipoise" (balance of risk-benefit between the donor and recipient). Rapid expansion of LDLT, and this intuitive tendency to use smaller liver grafts, makes SFSS a major clinical problem in LDLT.

Additionally, there is little consensus on different facets of SFSS including its prediction, definitions and measures which facilitate improved outcomes in these SFSGs. Management of patients with established SFSS also remains undefined.

In this Consensus Conference, we will discuss:

- The approach to patients with a SFSG
- The incidence, definitions, clinical factors and biomarkers of SFSS.
- Donor and recipient factors which increase the risk of SFSS and how to optimise these factors to reduce its incidence.
- Perioperative considerations in the management of a patient with SFSG
- Treatment and management of established SFSS.

LEARNING OBJECTIVES

1. Understand the gap in current practice by reviewing and summarizing published evidence on SFSS in LDLT.
2. Define criteria and prediction models for SFSS in patients undergoing LDLT with a SFSG.
3. Identification and timely intervention in patients with SFSG to reduce the risk of SFSS.
4. Provide recommendations and guidelines for the optimal multidisciplinary management of patients undergoing with established SFSS.

EXPECTED EDUCATIONAL OUTCOMES

The participants will be able to review and discuss research regarding SFSS, including selection criteria/indications, prognostic models, surveillance strategies, novel therapies and management. The participants will benefit from a clear elucidation of the current knowledge of portal hemodynamics and its practical application for SFSG in LDLT to prevent and manage SFSS. The participants will gain insight into innovations that lead to improvements in the field of LDLT.

TARGET AUDIENCE

Surgeons • Hepatologists • Anaesthesiologists • Critical Care Physicians • Pathologists • Interventional Radiologists • Nurses

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Scientific Program | Friday, January 27, 2023

08:00-09:00 **Introduction**
Mohamed Rela

09:00-10:00 **Topic 1: Diagnostic Criteria for post LDLT SFSS**
Kymberly Watt | Toru Ikegami | Mettu Srinivas Reddy | Eleonora De Martin | Dong-Sik Kim

09:00-09:15 Presentation

09:15-10:00 Discussion / Sub-topic recommendations and discussion

Definition
Yuji Soejima | Qiang Xia | Neeraj Saraf | Refaat Kamel | David Nasralla

Timelines of Diagnosis
Greg McKenna | Parthi Srinivasan | Vinayendra Pamecha | Kumar Palaniappan | Madhukar Patel

Biochemical and Clinical Factors
Valeria Mas | Yaman Tokat | Sonal Asthana | Ramkiran Cherukuru | Nicholas Syn | Jiang Liu

10:00-11:00 **Topic 2: Preventing SFSS in LDLT**
Giuliano Testa | Shiv Kumar Sarin | Nazia Selzner | Kwang Woong Lee | Arvinder Soin | Abdul Hakeem

10:00-10:15 Presentation

10:15-11:00 Discussion / Sub-topic recommendations and discussion

Donor Selection
James Pomposelli | Krishna Menon | Neerav Goyal | Rajesh Rajalingam | Young-in Yoon | Samir Abu-Gazala

Recipient Selection
Patrick Kamath | Dharmesh Kapoor | Francois Durand | Dinesh Jothimani | Carman Vinaixa | Alessandra Mazzola

Portal Modulation
Dong-Sik Kim | S Sudhindran | Vivek Vij | Tomoharu Yoshizumi | Johns Shaji Mathew | Felipe Alconchel

11:00-11:15 Break

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11:15 -12:15 **Topic 3: Anaesthesia and Critical Care considerations in preventing SFSS**
Tetsuro Sakai | Akila Rajakumar | Li-Ying Sun | Vijay Vohra | Ryan Chadha | Abhinav Humar

11:15-11:30 Presentation

11:30-12:15 Discussion / Sub-topic recommendations and discussion

Preoperative Considerations
Dmitri Bezinovir | Sanjiv Saigal | Mathew Jacob | Shweta Singh | Alexandra Shingina

Intraoperative modifications
Michael Spiro | Nam Joon Yi | Vinay Kumaran | Lakshmi Kumar | Dhupal Patel

Postoperative monitoring and intervention
James Findlay | Shaleen Agarwal | Pooja Bhangui | Gabriela Berlakovich | Uzung Yoon

12:15-13:15 **Topic 4: Treatment of SFSS**
Jean Emond | Roberto Troisi | Elizabeth Pomfret | Jong Man Kim | Varvara Kirchner | Kim Olthoff

12:15-12:30 Presentation

12:30-13:15 Discussion / Sub-topic recommendations and discussion

Management of Established post-LDLT SFSS - Medical aspects
Nigel Heaton | Wojtek Polak | Akash Shukla | Deniz Balci | David Victor

Management of Established post-LDLT SFSS - Interventional Radiology /Surgery
Mark Ghobrial | Subash Gupta | John Fung | Susumu Eguchi | Tomohiro Tanaka

Management of Established post-LDLT SFSS - Retransplantation
John Roberts | Bijan Eghtesad | Markus Selzner | Raj Prasad | Mureo Kasahara | Nicolas Goldaracena | Sadhana Shankar

13:15-14:15 Lunch

14:15-17:00 **Case Based Discussions on SFSS & Practical Applicability of the Recommendations**
Mohamed Rela | Hiroto Egawa | Kyung Suk-Suh | Jan Lerut | Mark Cattral | Pierre-Alain Clavien | Chao-Long Chen | Samir Shah | Zhi-Jun Zhu | Nancy Ascher

17:00-17:10 **Closing Remarks**
Mohamed Rela

2023 ILTS CONSENSUS CONFERENCE

Organising Chairs

- **Mohamed Rela, MS, FRCS, DSc**
  ILTS President
  Dr. Rela Institute and Medical Centre
  Chennai, India
- **Hiroto Egawa, MD, PhD**
  iLDLT President
  Tokyo Womens' Medical University,
  Tokyo, Japan
- **Ravi Mohanka, MS**
  LTSI President
  Global Hospital, Mumbai, India

Organising Committee

- **Prashant Bhangui, MBBS, MS**
  Medanta – The Medicity, Delhi NCR,
  India
- **Ashwin Rammohan, MCh, FRCS, FACS**
  Dr. Rela Institute and Medical Centre
  Chennai, India
- **Toru Ikegami, MD**
  Kyushu University, Fukuoka, Japan
- **Dong-Sik Kim, MD, PhD**
  Korea University College of Medicine,
  Seoul, South Korea

Scientific Liaison

- **Prashant Bhangui, MBBS, MS**
  Medanta – The Medicity, Delhi NCR,
  India
- **Ashwin Rammohan, MCh, FRCS, FACS**
  Dr. Rela Institute and Medical Centre
  Chennai, India

Working Group Members

- Shaleen Agarwal
- Sonal Asthana
- Deniz Balci
- Marina Berenguer
- Gabriela Berlakovich
- Dmtri Bezinover
- Pooja Bhangui
- Ramkiran Cherukuru
- Francois Durand
- Jean Emond
- Bijan Eghtesad
- Susumu Eguchi
- James Findlay
- John Fung
- Mark Ghobrial
- Neerav Goyal
- Subash Gupta
- Nigel Heaton
- Abhinav Humar
- Mathew Jacob
- Dinesh Jothimani
- Patrick Kamath
- Refaat Kamel
- Dharmesh Kapoor
- Mureo Kasahara
- Jong-Man Kim
- Vinay Kumaran
- Lakshmi Kumar
- Kwang-Woong Lee
- Valeria Mas
- Krishna Menon
- Greg McKenna
- Kim Olthoff
- Kumar Palaniappan
- Vinayendra Pamecha
- Wojtek Polak
- Elizabeth Pomfret
- James Pomposelli
- Raj Prasad
- Akila Rajakumar
- Rajesh Rajalingam
- Mettu Srinivas Reddy
- John Roberts
- Tetsuro Sakai
- Sanjiv Saigal
- Neeraj Saraf
- Shiv Kumar Sarin
- Markus Selzner
- Nazia Selzner
- Akash Shukla
- Shweta Singh
- Yuji Soejima
- Arvinder Soin
- Parthi Srinivasan
- S Sudhindran
- Li-Ying Sun
- Giuliano Testa
- Yaman Tokat
- Roberto Troisi
- Vivek Vij
- Vijay Vohra
- Kymberly Watt
- Qiang Xia
- Nam Joon Yi
- Tomoharu Yoshizumi

Independent Panel

- Mohamed Rela
- Marina Berenguer
- Hiroto Egawa
- Kyung Suk-Suh
- Jan Lerut
- Mark Cattral
- Pierre-Alain Clavien
- Chao Long Chen
- Samir Shah
- Zhi-Jun Zhu
- Nancy Ascher
- Dieter Broering