

# Acute Liver Failure: Science and Practice

March 30-31, 2020

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## PURPOSE AND CONTENT

Acute liver failure (ALF) is a rare but devastating condition that arises from diverse etiologies, has a high mortality and requires high resource utilization including transplantation.

The Acute Liver Failure Study Group (ALFSG) has been funded by NIDDK since 1997 to collect detailed clinical data on more than 3,500 patients, and will be closing its registry and database permanently in 2019. It is an opportune time to take stock, consider where the field of study of ALF is going, what has been accomplished and to determine future directions of research in this unique syndrome. The audience would include basic scientists that work on liver injury and clinicians (hepatologists, surgeons) who care for these very ill patients.

This two-day program will provide a comprehensive understanding of all aspects of the pathogenesis and treatment of ALF including possible future therapies. The initial day of the meeting will be devoted to allowing investigators to present work pertaining to pathogenesis and disease mechanisms. The second day of the meeting will be devoted to reviewing aspects of disease management including evaluation, treatment and consideration of prognosis, liver transplantation and liver support devices.

## EDUCATIONAL OBJECTIVES

Upon completion of this activity, participants should be able to:

- Describe the differences between liver injury from Acetaminophen (APAP) vs. other drugs.
- Restate the role of cytokines in relation to injury evolution.
- Explain basic factors that promote liver regeneration.
- Explain the concept of sterile inflammation.
- Discuss different mechanisms of liver injury and the role of genomics in susceptibility to acute liver failure.
- Describe the current state of genome wide association studies. Review current state of identification of single nucleotide polymorphisms (SNPs) for specific diseases/drug injuries
- Review the elements of the basic and advanced work-ups for ALF patients.
- Identify natural history, differences in presentation, and how etiology drives prognosis and transplant decisions.
- Describe the circulatory and neurological physiology of ALF.

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- Explain new understanding regarding hemostasis in ALF, management of kidney injury and hemostasis.
- Compare present treatment modalities and propose possible future management protocols.
- Contrast the differences in presentation and outcome of different etiologies.
- Relate how etiology drives prognosis and transplant decisions.
- Envision novel approaches to managing ALF in the future.
- Describe current issues surrounding liver support devices.

## TARGET AUDIENCE

This course is designed for providers in the specialties of Gastroenterology and Hepatology, Internal Medicine, Anesthesiology, Critical Care Medicine, and Surgery.

## SPONSORED BY

UT Southwestern Department of Internal Medicine, Division of Digestive & Liver Diseases and the Office of Continuing Medical Education

## ACCREDITATION AND DESIGNATION STATEMENT

The University of Texas Southwestern Medical Center is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

The University of Texas Southwestern Medical Center designates this live activity for a maximum of 12.25 AMA PRA Category 1 Credit™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

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## Agenda

MONDAY, MARCH 30, 2020

TIME	TOPIC	SPEAKER
7:00 a.m. - 8:00 a.m.	Registration/Breakfast	
8:00 a.m. - 10:15 a.m.	<b>Session 1: Acute Liver Failure: Overview and Mechanisms of Liver Injury</b> <b>Welcome and Introduction</b> <b>Acute Liver Failure and ALFSG</b> <b>Patterns of Liver Injury</b> <b>Clinical Phenotypes of ALF</b> <b>Histopathology of ALF</b> <b>SIRS and the Role of Infection in ALF</b>	Moderators: Brendan McGuire, M.D., William M. Lee, M.D. Brendan McGuire, M.D. William M. Lee, M.D. Neil Kaplowitz, M.D. Raj Reddy, M.D. David Kleiner, M.D. (TBD)
10:15 a.m. - 10:30 a.m.	Break	
10:30 a.m. - 12:30 p.m.	<b>Session 2: Liver Regeneration and Response to Injury</b> <b>Overview of Basic Regenerative Mechanisms</b> <b>Immunologic Basis of Liver Injury/Response</b> <b>Plasma Cells and Injury in HBV ALF</b> <b>Bio-markers in ALF</b>	Moderators: Sanjeev Gupta, M.D., Michael Schilsky, M.D. Sanjeev Gupta, M.D. Mark McPhail, M.D. Patrizia Farci, M.D. Mike Schilsky, M.D.
12:30 a.m. - 1:15 p.m.	Lunch	
1:15 p.m. - 2:45 p.m.	<b>Session 3: Genomics of Liver Injury</b> <b>Genomics Overview</b> <b>Genomics and Viral Liver Injury</b> <b>Genomics of Drug-Induced Liver Injury</b>	Moderators: Raymond Chung, M.D., Robert Fontana, M.D. Raymond Chung, M.D. Laurent Casanova, M.D.,PhD. Paola Nicoletti, Ph.D.
2:45 p.m. - 3:00 p.m.	Break	
3:00 p.m. - 5:00 p.m.	<b>Session 4: Diagnosis and Evaluation of ALF</b> <b>Natural History of ALF</b> <b>Workup of Acute Liver Failure: Checklist</b> <b>Case Presentation: New Diagnoses (HLH case)</b> <b>Causality: Determining Etiology in ALF</b>	Moderators: Jim Hanje, M.D., Dan Ganger, M.D. Ken Simpson, M.D. Oren Fix, M.D. Shannan Tujios, M.D. Daniel Ganger, M.D.

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## Agenda

TUESDAY, MARCH 31, 2020

TIME	TOPIC	SPEAKER
7:00 a.m. - 8:00 a.m.	Registration/Breakfast	
8:00 a.m. - 9:30 a.m.	<b>Session 5: Complications of ALF: Riding Out the Storm</b>  <b>Critical Care of ALF: Overview</b> <b>Hemostasis in ALF: Is There a Coagulopathy?</b> <b>Fluids, Pressors, Kidney Injury Management</b>	Moderators: Dean Karvellas, M.D., Jody Olson, M.D.  Dean Karvellas, M.D. R. Todd Stravitz, M.D. Jody Olson, M.D.
9:30 a.m. - 9:45 a.m.	Break	
9:45 a.m. - 12:00 p.m.	<b>Session 6: Prognosis in ALF/Role of Transplantation</b>  <b>Prognostic Indices: Determining Outcomes</b> <b>Designing Clinical Trials in an Orphan Disease</b> <b>Methacetin Breath Test and Other Tools</b> <b>Outcomes of Transplantation: SRTR and ALFSG</b> <b>Is ALF Going Away? An Epidemiologist's View</b>	Moderators: Ken Simpson, M.D., David Koch, M.D. David Koch, M.D. Valerie Durkalski, Ph.D. Robert Fontana, M.D. Justin Parekh, M.D. Baback Orandi, M.D.
12:00 p.m. - 1:00 p.m.	Lunch	
1:00 p.m. - 2:00 p.m.	<b>Session 7: The Future of ALF:</b> <b>Newer Modalities of Liver Support</b>  <b>Liver support machines: Current status</b> <b>Stem cell recruitment for liver support</b> <b>Final words</b>	Moderators: R. Todd Stravitz, M.D., Scott Nyberg, M.D. Scott Nyberg, M.D. Russell Wesson, M.D. William M Lee, M.D.