Cirrhosis
From 30000 meters

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Patient
Why Care?

- Global
- Society
- Family
- Personal
What Does The Liver Do?

- Chores
  - Makes
  - Breaks
  - Stores
  - Repackages
  - Cleans
  - Protects
  - Immune central
Progression

Liver Diseases
- Viral Hepatitis
- NASH
- Alcohol
- Autoimmune

Accelerants
- HIV
- Alcohol
- Diabetes

http://www.hepatitisc.uw.edu/go/evaluation-staging-monitoring/natural-history/core-concept/all
What happens?

The most important organ in the body!

GUT
Ascites
HUGE!
Other

- Encephalopathy
- Cytopenias
- Osteoporosis
Why does liver disease progress?
Why do some progress more than others?
Definition?

- What is it?
  - Cause of illness and death?
- Define
  - What to measure?
  - How to measure?
  - When to measure?
Prediction is very difficult, especially about the future.

Niels Bohr
Transient Elastography

Dr. AS Alawad
Fibrosis can reverse
HDV treated for 12 years
Also

- HCV
- HBV
- PBC
- AIH
- Alcohol
- Hemochromatosis
So to Study Progression?

- Approach
  - Patients are the reason to do research
  - It is not that we do research so need patients!
Two Pronged Approach

- Rare diseases - common approach
- Rare approach - common diseases

- Search for universal truth
- Aim to understand and ultimately halt progression of liver disease!
Nodular Regenerative Hyperplasia
All gut blood flows through the liver

Infection is a common cause of death in liver disease, typically with gut organisms

Microbial translocation from the gut is associated with advanced liver disease

Dysbiosis occurs as liver disease progresses

Does the microbiome and the response to it alter the course of liver disease?
Questions

- What is happening?
  - Constant translocation?
  - Pressure and translocation?
  - Microbiome content?
    - Qin et al Nature 2015
  - Shunting? Vs. Hepatic function?
  - Before the liver processes anything?
Approach

- Direct portal vein sampling?
  - Privileged vessel
- Pre-existing expertise
Sample liver tissue, portal and peripheral blood

Place in context of:
- Hepatic function
- Shunting
- Microbiome
- Inflammation
- Immunity

Bench to Bedside
Award
Sickle Cell patients with liver disease
Study reversal after bone marrow transplant
13-DK-0196
Courtney Fitzhugh, Matt Hsieh, John Tisdale
Epilogue and Prologue

- Started with patients
- Led to ideas
- Led to protocols/projects
- Patients are the frame of reference
- Take something back to patients
Unique environment at the NIH

Lay down the road; bench vs. bedside irrelevant

Boutique to the broad

Opportunity to learn about all end stage liver disease

Universal truths

All while taking care of people who desperately need care
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