LEADING MEDICINE:
A TOWN HALL CONVERSATION
WITH DR. MARC BOOM

Town Hall Conversation XXIV

We will begin at 10 a.m.
Lynda K. and David M. Underwood Center for Digestive Disorders inaugurated in 2013

- **Dedicated** to the delivery of integrated care, across specialties for digestive disorders
- **Devoted** to the education and training of health care practitioners, students, patients and their families
- **Committed** to clinical and translational research
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What is Underwood?

- It includes anyone who deals with problems related to the gastrointestinal tract:
  - Esophagus
  - Stomach
  - Small Intestine
  - Colon
  - Liver
  - Pancreas
  - Gall bladder and bile ducts
Who is in Underwood?

- Gastroenterology
- GI surgery
- Thoracic surgery
- Bariatric surgery
- Colon and Rectal Surgery
- Radiology and Imaging
- Pathology
- GI Oncology
- Radiation Oncology
- Nutrition
- Psychology
We Overlap!

Dr. Mary and Ron Neal Cancer Center

J.C. Walter Jr. Transplant Center

and there are others
The story so far...

- Recognized as a Center of Excellence at HMH
- Guided by a Council of business and community leaders co-chaired by Rob Fondren and Duncan Underwood
- Ranked #10 by U.S. News & World Report for gastroenterology and GI surgery (in the top 15 since our inception)
  - # 1 in Texas
- One of the leading liver transplant programs in the U.S.
- Since the accreditation of our training program in 2014, graduated 10 fellows and have now expanded to 3 trainees per year and added an advanced training program in transplant hepatology
## Gastroenterology
- Eamonn Quigley
- Bincy Abraham
- Alberto Barroso
- Daniel Bushyhead
- Sunil Dacha
- Gulchin Ergun
- Steven Frachtman
- Kerri Glassner
- Neeharika Kalakota
- Brian Kaplan
- Sandeep Lahoti
- Neha Mathur
- Ali Raza
- Rachel Schiesser
- Mathew Tompson
- Fernando Urrutia
- Karen Woods

## Hepatology
- Robert McFadden
- David Victor
- Sudha Kodali

## PAs/NPs
- Deborah Calaris
- Veronica Carreon*
- Amanda Morrill
- Ashley Roitch*
- Maura Smith*
- Dashawn Thomas

## New Recruits
- Tamneet Basra MD
- Christopher Fan MD
- Malcom Irani MD
- Thomas McCarty MD
- (Hepatology NP)*
• Esophagus
  – Esophageal reflux (GERD)
    • Full range of diagnostics
    • LINX and TIF procedures
  – Problems with esophageal motility (e.g. achalasia)
    • HRM and EndoFlip
  – Esophageal Cancer
    • Early detection and staging
What do we do?

- **Stomach**
  - Ulcers and ulcer bleeding
    - Range of hemostatic techniques
  - Cancer
    - Early detection and staging
  - Gastroparesis
    - G-POEM
What do we do?

• Small Intestine and Colon
  – Celiac disease
    • Alternatives to a gluten-free diet
  – Inflammatory Bowel Disease (Crohn’s disease and Ulcerative Colitis)
    • New therapies
    • Intestinal ultrasound
What do we do?

- Small Intestine and Colon
  - Irritable Bowel Syndrome and constipation
    - Alternatives to a gluten-free diet
  - Colon and rectal cancer
    - New screening guidelines
    - Non-surgical removal of large polyps
What do we do?

• Liver
  – “Cure” for chronic hepatitis
  – Liver cancer
    • Clinical trials with MDACC and other collaborators
  – Transplantation
    • A national leader
    • Living-donor transplants
    • Multivisceral Transplants
  – Metabolic liver disease
What do we do?

• Pancreas and bile ducts
  – Pancreatic cancer
    • Accurate diagnosis
    • Low surgical mortality
  – Bile duct stones and cancer
    • Advanced imaging
    • Endoscopic treatment
Conferences and Symposia

- Friday Morning Interdisciplinary Conference
  - Dr. Albert Barroso
- Monthly City-wide IBD conference
- Monthly City-wide Motility conference
- 8 Annual Underwood Symposia
  - 9th on August 19 and 20, 2022
- 9 Annual Houston Methodist IBD Lectures

Antonio M. Gotto Jr, MD, DPhil, MACP, Distinguished Lectureship Series presents

9th Annual Houston Methodist IBD Lectureship
Sponsored by Dr. and Mrs. A. Carl Schmulen

Mistakes to Avoid in the Management of Severe Ulcerative Colitis

Presented by Francis (Frank) A. Farraye, MD, MS
Senior Associate Consultant
Section of Gastroenterology and Hepatology
Professor of Medicine
Mayo Clinic
Jacksonville, Florida
Research Projects

- Clinical Trials in UC and Crohn’s disease
- Hepatic Steatosis in IBD
- Curcumin in IBD-related arthropathy
- CV disease in IBD
- Management of HCC and Cholangiocarcinoma
- Imaging in NAFLD
- Transplantation for ALD

DeBakey Heart and Vascular Cancer Center, Transplant Cancer MDACC
Texas A&M Transplant Center
Research Projects

• Microbiome and new biotherapeutics in IBS
• Vibrating Capsule in CIC
• New approaches to Anorectal Function
• G-POEM and EndoFlip in Gastroparesis
• Food allergy in IBS
• Fellow and resident projects
**THE OPPORTUNITY...**
Phase I: Strengthen the infrastructure of The Immunology Center and The Food and Health Alliance, setting the groundwork for Phase II: Launch of the Inflammation Collaborative, which will focus on research related to inflammation as an underlying cause/trigger of immunologic and gastrointestinal diseases and disorders.

Phase III: Expand the Inflammation Collaborative to include expertise and programmatic support for additional medical conditions impacted by inflammation. These conditions could include heart, neurodegeneration, psychiatric, transplant, liver and metabolic, among others. The Inflammation Collaborative will serve as a key multidisciplinary translational research and treatment platform for Houston Methodist in the new era of Restorative Medicine.
The Future

- Develop to provide “leading medicine” care across the spectrum of digestive disorders
- Educate the physicians of the future
- Actively engage with patients and the community to further their digestive health
- Be at the cutting edge of clinical and translational research
Colorectal Cancer

- Cancer arising from the colon (large intestine)
Colorectal Cancer

The Good News

• Most colorectal cancer is preventable
  – Almost always begins as a polyp
    • Benign
    • Slow growing
    • Common

Colorectal Cancer
The Good News

- Overall rates of colon cancer and death are decreasing
Colorectal Cancer

The Good News

• 5 year relative survival is increasing

Colorectal Cancer
Concerning Trend

• Incidence increasing among younger people

National Cancer Institute’s Surveillance, Epidemiology and End Results Program (SEER)
• Under age 50: detected for symptoms/signs
• Age 50: screening and colonoscopy is now finding the pre-existing cancers
• Average risk screening is now recommended at age 45 (Grade B)
  – USPSTF – US Preventive Services Task Force
Screening Tools

- Stool based tests
- Imaging – CT colonography
- Endoscopic procedures
Screening Tools

• Stool based – recommended for average risk screening for colorectal cancer
  – Guaiac based fecal occult blood test (gFOBT) – annual test
    • Sensitive to detect cancer (50-75%)
    • Not sensitive to detect advanced adenoma (6%-17%)
  – Fecal immunohistochemical test (FIT) – annual test
    • Sensitive to detect cancer (74%)
    • More sensitive to detect advanced adenoma (23%)
  – FIT +DNA – Cologuard – every 3 years
    • Sensitive to detect cancer (93%)
    • Best stool test sensitivity to detect advanced adenoma (43%)

• If stool test is positive then follow with colonoscopy
  – Can have false positives

Lin et al, JAMA 2021
Screening Tools

• Imaging
  – CT colonography – every 5 years
    • Detects colon cancer
    • Sensitive for advanced adenomas (67% to 94%)
    • Sensitive for polyps >6mm (73% to 98%)
    • May miss flat polyps
    • Requires bowel prep
    • Radiation exposure (range, 0.8 to 5.3 mSv)
    • Incidental findings on CT
    • If positive then colonoscopy required

Lin et al, JAMA 2021
Clinical Gastroenterology and Hepatology 2020;18:xv  Lin et al, JAMA 2021
Screening Tools

• **Endoscopic procedures**
  – **Sigmoidoscopy (+/- FIT) – every 5 years**
    • Just examines the lower part of the colon (sigmoid and rectum)
    • Requires modified prep
    • May be done without sedation
    • Low rate of serious adverse events
    • If polyps found then they are removed and full colonoscopy recommended
  – **Colonoscopy – if normal every 10 years**
    • Detects colon cancer
    • Sensitive for advanced adenomas (89-95%)
    • Sensitive for adenomas >6mm (75-93%)
    • Very small polyps can be found and removed
    • Requires full prep
    • Removes polyps at time of procedure
    • Serious adverse events:
      – Perforation: 3.1 per 10,000 procedures
      – Bleeding: 14.6 per 10,000 procedures

Lin et al, JAMA 2021
When to repeat screening

US Multi-Society Task Force on Colorectal Cancer (ACG, AGA, ASGE)

Previously 5 years

Recommendations for post-colonoscopy follow-up in average risk adults

Gupta et al 2020
How to choose?

Personalized screening

1) Determine individual risk category
2) Weigh individual’s risk of harm from test
3) Determine goals of screening
How to choose?
Personalized screening

1) Determine risk category
   – Average risk
   – Elevated risk – colonoscopy preferred, may start sooner than 45 years of age and perform more frequently
     • Personal history of pre-cancerous colon polyps or cancer
     • Family history of advanced colon polyps
     • Family history of colorectal cancer
     • Known or suspected hereditary syndrome
     • History of inflammatory bowel disease
     • History of abdominal or pelvic radiation
     • Cystic Fibrosis
How to choose?
Personalized screening

2) Weigh individual’s risk of harm from test
   - Age
   - Medical conditions
     - Cardiac disease
     - Pulmonary disease
     - Blood thinners
     - Bleeding disorders
     - Previous difficulty with anesthesia
     - Inability to safely perform bowel prep
   - Unusual anatomy, prior difficult colonoscopy
3) Set goals of screening
   – Early detection of cancer
   – Polyp detection (large and/or smaller)
   – Prevention of large polyps and cancer
Gastroenterologist Perspective

- Prevention
  - Find and remove smaller polyps
    - easy to remove without use of cautery
      - Low risk of polyp removal complications
  - 7mm tubular adenoma
    - Repeat colonoscopy 7-10 years

Tate et al 2017
Summary

- Colorectal cancer screening saves lives
  - Early detection and prevention
- Screening is now offered at age 45
- Multiple options for screening
- 1-2 small polyps = repeat screen in 7-10 years (instead of 5)

- Thank you!


Fatty Liver – The New Epidemic
What is fatty liver?

- **MAFLD** – Metabolic Associated Fatty Liver Disease
  - Any condition that can cause fatty liver disease
  - Estimated that ~50% of globe meets criteria for MAFLD

- **NAFLD** – Nonalcoholic Fatty Liver Disease
  - Hepatic Steatosis by imaging OR Histology
    - **WITHOUT** other etiology for hepatic fat accumulation
    - There is no significant alcohol consumption
    - There are no competing etiologies for hepatic steatosis
    - There are no co-existing causes for chronic liver disease
In 1991, only 4 states had prevalence >15%.

By 2010, none had <20%.
Prevalence estimates reflect BRFSS methodological changes started in 2011. These estimates should not be compared to prevalence estimates before 2011.

*Sample size <50 or the relative standard error (dividing the standard error by the prevalence) ≥ 30%.
Obesity prevalence in Texas
Obesity prevalence among Hispanic Adults – 2018

*Sample size <50 or the relative standard error (dividing the standard error by the prevalence) ≥ 30%.
Progression of NAFLD

- **Healthy Liver**
- **Fatty Liver**
  - Simple fat accumulation
- **NASH**
  - Nonalcoholic steatohepatitis
- **Cirrhosis**
  - Scar tissue

NAFLD

NASH

Cirrhosis
How is Fatty Liver diagnosed?

- Liver Biopsy is the gold standard for diagnosis of fatty liver
- Typically, patients are diagnosed by Imaging
  - Ultrasound
    - 100% and 93% sensitive
    - Requires >30% steatosis
  - CT can reasonably assess for moderate to severe fatty liver
    - Cardiac CT can often identify
  - MRI – can detect lowest levels of fatty liver
    - PDFF can be follow longitudinally
Lifestyle recommendations for treating NASH

**Caloric intake reduction**
- ≥30% or ~750-1,000 kcal/day improved insulin resistance and hepatic steatosis
- *Limit consumption of fructose-enriched beverages*

**Weight loss**
- Of 3% to 5% can improve steatosis, but 6% to 10% is needed to improve NASH/fibrosis

**Exercise**
- Alone may reduce steatosis, but effect on other histologic features unknown

**No heavy alcohol consumption**
- Insufficient data to guide recommendations regarding nonheavy alcohol consumption
- **Drink >2 cups of caffeinated coffee daily**

*Fructose increases the odds of the development of nonalcoholic fatty liver in high-risk patients and of nonalcoholic steatohepatitis and more advanced liver fibrosis in patients who already have nonalcoholic fatty liver disease.

**Caffeinated coffee reduces the risk of liver fibrosis in several liver diseases, including nonalcoholic fatty liver disease.**

Backbone of treatment remains weight loss

- Weight Loss ≥10%
- Weight Loss ≥7%
- Weight Loss ≥5%
- Weight Loss ≥3%

Fibrosis (45%)
- Patients achieving: <10% in 1 year

NASH resolution (64–90%)*
- Patients achieving: 18% in 1 year

Ballooning/inflammation (41–100%)*
- Patients achieving: 30% in 1 year

Steatosis (35–100%)*

So is that all you can do?

Patients with suspected NAFLD

Rule-out other causes of liver disease (alcohol, HBV, HCV)

Rule-out advanced fibrosis (FIB-4 score)

FIB-4 < 1.3

Low risk

FIB-4 ≥ 1.3

Intermediate to high risk

Lifestyle modifications and exercise

Consider referral to Metabolic Liver Disease Clinic

Repeat evaluation at 1 year

https://www.houstonmethodist.org/transplant/liver-center/
Fondren IBD center is using in-office ultrasound to identify patients with IBD and NAFLD

Identifying patients at risk for coexisting liver disease and using the Metabolic Liver Disease program to try to reverse their NAFLD through diet and pharmacotherapies
Summary: Current treatments for NASH/NAFLD

- Steatosis, but no evidence of significant fibrosis

- Assessment for NASH or fibrosis

- Histologic NASH or evidence of significant fibrosis

- Steatosis Identified

- Weight loss

- Lifestyle Modification/Diet
  - FDA Approved Anti-Obesity Pharmacotherapy
  - Bariatric Procedure

- Management of metabolic syndrome and CVD risk
  - Insulin Resistance – Metformin may decrease HCC risk
  - Hyperlipidemia – Statin improve CV health, may reduce HCC and Portal HTN
  - DM/Obesity – GLP-1
  - Alcohol – Avoid Significant EtOH use

- Liver Directed Pharmacotherapy in patients with Fibrosis
  - Vitamin E in non-diabetic pre-cirrhotic adults
  - Pioglitazone in diabetics pre-cirrhotic adults
What is the future for MAFLD?

- Diet and Exercise are not going away
  - Sorry
- Better categorization of patients
- Combination of pharmacologic therapy for
  - Anti-fibrotic therapies
  - Anti-steatotic treatment
- Genetic risk stratification
- Targeting the microbiome
Houston Methodist Testing Trend

Confirmed COVID-19 Lab Tests

- Positive COVID-19 Tests
- 7 Day Rolling Average of Percent of Positive Tests
Wastewater Sampling

Most recent data: April 20, 2022

Wastewater:
Effective SARS-CoV-2 virus concentration (copies / mL of sewage)

powered by Biobot Analytics

Northeast
Midwest
South
West

https://biobot.io/data/
COVID-19 Viral Load Detected in City of Houston Wastewater

Viral Load: 79%
In comparison to July 6, 2020

Positivity Rate: 4%

COVID-19 Viral Load in Wastewater (Compared to July 6, 2020)

https://covidwwtp.spatialstudieslab.org/
The Landscape of Variants

How the coronavirus has mutated
Comparing coronavirus variants to early 2020 strains.

- Delta
- Alpha
- Epsilon
- Beta
- Gamma
- Mu
- Early 2020 strains

BA.2
BA.2.12.1

Antibodies are less effective

Sources: Contagiousness is based on estimates of growth advantage by Marlin Figgins and Trevor Bedford. Antibody escape is based on antibody sera collected from patients treated with the Moderna vaccine. Note: Figures are approximate. Figures for Omicron reflect the variant's BA.1 lineage and are extrapolated based on findings of a 105 percent growth advantage by Omicron compared to Delta.
Omicron Requires a Third Dose

Effectiveness of Covid-19 Vaccines against the Omicron Variant

RETROSPECTIVE CASE–CONTROL STUDY IN ENGLAND

2,663,549 Persons with Covid-19 and test-negative controls

Vaccine effectiveness against symptomatic disease, according to time since vaccination

Two doses of either vaccine provided limited protection against symptomatic disease from omicron; boosting with BNT162b2 significantly increased protection.

ChAdOx1 nCoV-19 (AstraZeneca)

BNT162b2 (Pfizer–BioNTech)

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Leadership Update

Trent Fulin named CEO of Houston Methodist Cypress
Centennial Tower Announced
Campaign Celebration
Unparalleled Potential: Campaign for the Future of Medicine

$50 Million Transformational Cornerstone Gift Received

$50M Anonymous Commitment Received!

To create the Unparalleled Potential Challenge (“UPC”) - Philanthropic Impact $154.25M -
$11 Million Transformational Gift Received

$11 million from Jim and Carole Walter Looke

- Orthopedics & Sports Medicine
  - C. James and Carole Walter Looke Presidential Distinguished Centennial Chair in Orthopedics
  - C. James and Carole Walter Looke Chair in Orthopedic Spine Surgery
  - C. James and Carole Walter Looke Orthopedic Resident and Fellow Research Awards in honor of Joseph C. “Rusty” Walter III

- J.C. Walter Jr. Transplant Center
  - C. James and Carole Walter Looke Clinical and Research Training Program in honor of Elizabeth C. Walter

- Spiritual Care
  - C. James and Carole Walter Looke Volunteer Chaplaincy and Education Program

- Department of Surgery
  - C. James and Carole Walter Looke Distinguished Centennial Chair in Surgical Excellence

- Department of Psychiatry/Behavioral Health
  - Neuropsychiatric Research and Innovation Program Challenge
THANK YOU
FOR ATTENDING OUR
TOWN HALL CONVERSATION

If you would like more information about the Lynda K. and David M. Underwood Center for Digestive Disorders or the GI Council, please contact Jackie Callies at jccallies@houstonmethodist.org or Emily Schott at ekschott@houstonmethodist.org.