



# Common Gastroenterology Referrals

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Adult Gastroenterology & Hepatology

# Disclosures

- **Speaker: Dr. Jordan Green**
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# Objectives

- Iron Deficiency Anemia
  - Learn how to identify IDA
  - Learn an approach to work up of IDA
- NAFLD
  - Identify an approach to hepatic steatosis and associated terminology
  - Review potential outcomes and treatment options
- GERD
  - Review “take home points” on management

# Case 1

- Case 1: Mr. X
- 48 male referred for anemia, please consider colonoscopy, upper endoscopy or both
- Hg 110 MCV 85
- Remainder of CBC normal

# Case 1

- Past history: Obesity, hypertension, diabetes (nephropathy), rheumatoid arthritis
- Meds: Ramipril, HCTZ, metformin, gliclazide, prednisone prn
- Family Hx: Father colon ca (age 55)
- No prior endoscopy
- GI: Asymptomatic

# A Common Problem

- 25% of world has anemia
  - Half related to iron deficiency
- Iron deficiency
  - 11% women
  - 4% men
- 1-2% of adults have iron deficiency anemia
  - More common age 65+
    - 12 – 17 %

# Iron Deficiency

- Absolute iron deficiency
  - **Gastrointestinal**
- Functional iron deficiency
  - Chronic disease
  - EPO

# Ferritin

- Normal
  - 40 – 200 mcg/L
- Absolutely abnormal
  - Less than 10 – 15 mcg/L
  - Sens 59%, Spec 99%
- Improve the sensitivity
  - **41 mcg/L → Sens 98%, Spec 98%**



**TABLE III**  
**Likelihood Ratios**

Interval	Number Iron-Deficient	Number Not Iron-Deficient	Likelihood Ratio
<b>Ferritin</b>			
>100	8	108	0.13
>45 ≤ 100	7	27	0.46
>18 ≤ 45	23	13	3.12
≤18	47	2	41.47
Total	85	150	
<b>Transferrin saturation</b>			
>0.21	9	55	0.28
>0.8 ≤ 0.21	23	70	0.57
>0.05 ≤ 0.08	14	17	1.43
≤0.05	38	4	16.51
Total	84	146	

# Acute phase reactant?

- Release of ferritin by hepatic cells
  - IL-1 and TNF
- May be falsely normal
- **“Rule of 3”**
- < 60 mcg/L
  - 83% PPV

# Iron Studies

- Pattern:
  - Low serum iron
  - High Transferrin
  - Low % Transferrin Saturation
- Not as accurate as ferritin
  - Inflammation
    - Low serum iron and/or TIBC
  - Medication, Pregnancy
    - Increase transferrin

# Potential causes of IDA...

- Decreased absorption
  - Atrophic gastritis
  - H. pylori
- Foods/Meds
  - EPO
  - Phytate
  - Polyphenols
- Gastric bypass
- Celiac disease

# GI Malignancy

→ One should consider as top DDX in patients with iron deficiency anemia

In particular: >50 yr men & postmenopausal women

# GI Malignancy

- 9024 participants
  - IDA: 3/51 (6%)
  - ID: 2/223 (1%)
  - Normal: 11/5733 (0.2%)
- **RR 31** for GI malignancy (if have IDA)
- No malignancy in premenopausal women with ID/IDA



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## ORIGINAL ARTICLE

### Evaluation of the Gastrointestinal Tract in Patients with Iron-Deficiency Anemia

Don C. Rockey, and John P. Cello

N Engl J Med 1993; 329:1691-1695 | December 2, 1993 | DOI: 10.1056/NEJM199312023292303

62/100 patients

- 36 Upper GI
- 25 Lower GI
- **11 Cancers**

# Typical Approach to IDA

- EGD + Colonoscopy
  - Men & postmenopausal women
- Celiac Ds
- Colonoscopy still required if
  - EGD done first
  - > 50 and/or family history of CRC



# What about ID without anemia??

- Rarely detect malignancy
- Consider > 50 postmenopausal woman & men

# AGA Position Statement

- “Once all the findings on standard examinations (**EGD and colonoscopy**) are **negative**, the small bowel may be assumed to be the source of blood loss and **capsule endoscopy** should be the third test in the evaluation of patients with GI bleeding”

# Back to Case 1

- CRP 45
- Ferritin: 220 (rule of 3 → 73)
- No GI symptoms → No indication for pan endoscopy based on anemia
  - Likely anemia of chronic disease/inflammation
- Family history → colonoscopy

# Case 2

- Case 2: Mrs. Y
- 57 year female referred for “elevated liver enzymes”
- AST 46 ALT 58 Tbili 12 ALP 60
- PMH: Type II DM, obesity (BMI 35), HTN
- No alcohol
- Meds: Metformin, Perindopril, ASA

# Case 2

- Negative work up
  - Viral serologies, ferritin, alpha-1-AT, ceruloplasmin, autoimmune markers
- Ultrasound: moderate to severe fatty infiltration of the liver with no evidence of nodularity, normal spleen
- **What next?**

# Hepatic Steatosis: DDx

## Macrovesicular steatosis

- Excessive alcohol consumption
- Hepatitis C (genotype 3)
- WD
- Lipodystrophy
- Starvation
- Parenteral nutrition
- Abetalipoproteinemia
- Medications (e.g., mipomersen, lomitapide, amiodarone, methotrexate, tamoxifen, corticosteroids)

## Microvesicular steatosis

- Reye's syndrome
- Medications (valproate, antiretroviral medicines)
- Acute fatty liver of pregnancy
- HELLP syndrome
- Inborn errors of metabolism (e.g., lecithin-cholesterol acyltransferase deficiency, cholesterol ester storage disease, Wolman's disease)

# NAFLD

- NAFL:  $\geq$  5% hepatic steatosis without hepatocellular injury or fibrosis
  - Risk of progression minimal
- NASH:  $\geq$  5% hepatic steatosis with hepatocellular injury and/or fibrosis

# NAFL & NASH – a global phenomenon

- NAFL diagnosed on imaging: 25.24%
- NASH prevalence? In those with NAFL ...
  - 6.5 – 59%
- NASH in general population: 1.5 – 6.45%



# NAFLD: Associated Conditions

- Obesity
- DM2
- Dyslipidemia
- Metabolic Syndrome
- PCOS

# Outcomes

- Mortality
  - <1% liver related
- Cirrhosis
- Cancer
  - HCC
- Liver transplant
  - Soon to be primary indication

# Incidental Finding

- If signs/symptoms of liver disease, or abnormal liver chemistries: evaluate as if suspected NAFLD
- If asymptomatic and normal labs: assess for other metabolic conditions and exclude alternate etiologies of steatosis

# Evaluating NAFLD

- **NAFLD Fibrosis Score**
  - <http://gihep.com/calculators/hepatology/nafld-fibrosis-score/>
  - Excellent to rule in advanced fibrosis
- FIB-4
- Fibroscan
- Liver biopsy

# Treatment

- Modify & manage coexisting conditions
  - Diabetes, HTN, Dyslipidemia
- Weight loss
  - 5% → hepatic steatosis
  - 10% → inflammation & fibrosis
  - Mediterranean diet
- Physical Activity
  - 150 minutes a week

# Treatment

- Pioglitazone
  - 34% vs. 19 % placebo ( $p = 0.04$ )
- Vitamin E
  - 42% vs. 19% placebo ( $p < 0.001$ )
  - NNT 4.4

Sanyal et al. NEJM 2010

Chalasani et al. Hepatology 2016

# Back to Case 2

- Fibroscan: F2/3
- Liver biopsy: Stage II fibrosis
- Manage co existing conditions
- Weight loss
- ~~Vitamin E~~
- Consider pioglitazone instead of metformin

# Case 3

- Case 3: Mr. Z
- 25 male referred for heartburn for one year, not responding to ranitidine, please consider scope



# GERD – quick take home points

- GERD is COMMON
  - 10-20% of population
  - Intensity decreases with age
  - Risk of ERD increases with age
  - Obesity

# GERD – Diagnosis

- Typical symptoms
  - Heartburn
  - Regurgitation
  - Non cardiac chest pain
- Atypical symptoms
  - Epigastric pain
  - Early satiety
  - Belching
  - Bloating

# GERD – Diagnostic Tools

- Barium studies
  - Should **not** be performed to diagnose GERD
  - Dysphagia is the exception
- Manometry
  - No role in making diagnosis
- Endoscopy
- 24 hour pH study

# GERD – Diagnosis

- Endoscopy is **not** required if typical symptoms absence of “red flags” or high risk patients
- Red Flags
  - Dysphagia
  - Weight loss
- High Risk
  - Male
  - Obese
  - Duration of symptoms (5-10+ years)
  - Age (50+ years)
  - Caucasian

# GERD – Therapy

- Lifestyle management is imperative
  - Weight loss
  - Avoid food 2-3 hours before bed
  - Elevate head of bed (bricks or boards, NOT pillows)
  - Global food avoidance NOT suggested
    - Food diary

# GERD – Therapy

- Empiric therapy with PPI x 8 weeks is recommended if typical symptoms, patient is not considered high risk, and no red flag symptoms

# GERD – Therapy

- Remember: timing of administration of PPI's is important
  - Traditional delayed release: administer 30-60 minutes AC breakfast
  - Newer PPI (i.e. dexlansoprazole): timing irrelevant

# GERD – Therapy

- If partial response: can try adding second dose
- If no response: can consider trial of another PPI
- Ranitidine
- If refractory or symptoms change: refer for evaluation



# Back to case 3

- Typical GERD symptoms
  - Denies dysphagia or weight loss
- Smoker, BMI 31
- No Rx meds/OTC
- Family history - non contributory

# Back to case 3

- Lifestyle modification
  - Weight loss
  - Elevate head of bed
  - Avoid eating 2-3 hours before bed
  - Food diary
  - Smoking cessation
- Start PPI, reviewing timing of administration, & reassess in 8 weeks

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# Questions?



# Thank you!



# Extra Slides

# Safety of PPI's

- Controversial area
- No evidence for:
  - Plavix
  - Vitamin deficiencies
  - Osteoporosis
- Evidence for:
  - CAP (short term)
  - Enteric infections (C. difficile)

**TABLE V****Post-Test Probability of Iron Deficiency Given Varying Pre-Test Probabilities and Results of Serum Ferritin Determinations**

	Pre-Test Probability			Study Population (36%)
	Low (5% - 20%)	Intermediate (40% - 60%)	High (80% - 95%)	
Serum ferritin result ( $\mu\text{g/L}$ )				
>100	0.6-3	8-16	34-71	7
45-100	2-10	24-41	39-90	21
18-45	14-44	68-82	93-98	64
<18	69-91	97-98	99-99.9	96