GI Update 2014- Tutor Manual
Hepatitis Screening Small Group Session

Case 1

A 54 year old man presents to clinic for his annual health examination. He has no specific complaints and is currently healthy. He takes no medications. He drinks 2 glasses of wine daily but denies drug use.

His BMI is 31. He has no stigmata of chronic liver disease and no hepatosplenomegaly on examination.

His most recent labs show a normal CBC, normal INR, and normal liver enzymes.

He is asking what health screening is indicated for him.

Q1) Would you screen this patient for viral hepatitis? Why or why not?

- CDC, US Preventative Services Task Force both advocate one time only screening for Hep C in baby boomers (born 1945-65).
    - This age group accounts for 75% of HCV infections in USA (similar in Canada), and 73% of HCV mortality. Prevalence in this age group is 3.25% (vs 1.6 % US population risk)
        - In Canada the higher rates of Hep C positivity are seen in birth cohort from 1945-1970
        - HCC is the fastest growing cause of cancer related mortality
        - Chronic Hep C: 20% progress to cirrhosis at 20 years, 5% mortality from liver disease
    - Many are unaware they are infected, may underreport risk factors
    - New therapies offer increased rate of SVR which is likely to result in decreased HCC and liver related mortality
    - Cost-effectiveness modeling supports screening, but with new expensive drugs (sofosbuvir $54K) there is going to be high up front cost to this approach
    - No Canadian guidelines so far
    - None of this is based on direct evidence- need to know outcomes of treatment in screen detected patients
        - Models may have overestimated the rates of liver disease prevention
        - We don't know what proportion of Hep C +ve people in Canada have already been identified (if it is high, then population based screening less cost effective)
    - Consider screening at the same time as screening for colon cancer?

- This strategy still won't address the difficulties of screening and treating current IVDU's (who are at highest risk for incident infection) and is only applicable to the developed world

Q2) If you did screen this patient, what test would you order?

-anti-HCV antibody as initial screening test in immunocompetent people
-highly sensitive and specific
-if negative the patient is not HCV infected
-repeat testing only if ongoing risk factors (eg, current IVDU)
-if anti-HCV is positive: do HCV RNA to distinguish current from cleared infection
-refer to hepatology/infectious diseases
-Genotype if HCV RNA positive

Q3) What are the indications for Hepatitis C screening?

-CDC recommendations are IN ADDITION TO screening patients with identified risk factors such as:
-HIV infected persons
-history of IV drug use (even if only once many years ago), intranasal cocaine
-tattoo in unregulated establishment
-incarceration
-received clotting factors prior to 1987
-blood transfusion prior to 1992
-organ transplant prior to 1992
-hemodialysis patients
-child born to Hep C positive woman (antibody positive after 15 months of age or +ve HCV RNA twice between 2 and 6 months of age)
-post-needle stick in health care workers
-elevated ALT levels (this is case finding, not screening)
-?high risk sexual behavior? (not an effective way to transmit Hep C, but rates are higher in people with >20 sex partners- may be a surrogate marker for other risky behavior?)
-don't forget countries with high endemic rates of Hep C (Africa, especially Egypt, Eastern Europe, Middle East, South Asia)

41% of primary care providers in the US are unfamiliar with these guidelines

Q4) If this patient was found to have hepatitis C infection, what further recommendations or testing would you provide?

-screening for alcohol use- 2 drinks a day is too much in a patient with chronic Hep C
-weight loss- increased risk of progression in high BMI, aim for BMI <25
-avoid herbal supplements
-test for HIV, Hep B, Hep A exposure
-vaccinate for Hep B and A if not previously exposed
-refer for Fibroscan to determine need for anti-viral therapy
    -liver enzymes do not accurately reflect histology
-may discuss biopsy as the gold standard test, although non-invasive tests of fibrosis are becoming more commonly used
-discuss prevention of transmission to others (no blood donation, don't share toothbrushes, razors etc)

Q5) What is the likelihood of curing Hepatitis C with current therapy?

-antiviral therapy indicated for bridging fibrosis, septal fibrosis or cirrhosis (F2-4)
-PEG-IFN + RBV genotype 1: 38-44% SVR
-adding telapravir or bocepravir to PEG IFN + RBV: 63-75% SVR
    -higher rates of adverse effects
-sofosbuvir + PEG-IFN + RBV: 12 weeks therapy 90% SVR, adverse reactions no higher than with PEG IFN and RBV alone
    -sofosbuvir costs 90K in US, about 54K here

-future therapies: IFN-free therapy with oral agents
-Vaccine (Michael Houghton UofA) possible within 10 years?

Case 2

A 52 year old woman presents for periodic health examination. She was born in Somalia and immigrated to Canada 1 year ago. She has some vague epigastric pain, and a recent abdominal examination was normal. She takes no medications, and denies alcohol use, smoking, recreational drugs, or herbal medications.

Her blood work shows:
ALT 43
AST 32
Alkaline phosphatase 82
Bilirubin 18
INR 1.1
Hb 135
Platelets 130

Q1) Should this woman be screened for viral hepatitis?

-Yes. Endemic Hep B (8%), also high rates of Hep C, so should make a case for testing for both.
-CDC recommends screening for Hep B in everyone born in:
    -Asian-Pacific regions (except Japan)
    -Africa
    -eastern and southern Europe
    -Central America (except Mexico)
    90% of immigrants to Canada come from countries where Hep B is endemic!

-Other groups who require screening:
    -household and sexual partners of people with Hep B
    -men who have sex with men
    -HIV +ve patients
    -IV drug users
    -multiple sexual partners (>1 per 6 months?, history of STI)
    -correctional services inmates
    -pre-immunosuppresive therapy (chemo, biologics)
    -hemodialysis
    -elevated ALT
    -routine pre-natal testing for pregnant women, and testing of infants born to Hep B +ve mothers (test between 9-18 months of age, after all 3 vaccines given)

Q2) If yes, which tests would you order?
-HBsAg, HBsAb
-if HBsAg +ve: get ALT, HBeAg, anti-HBe, HBV-DNA
    -refer to hepatology
    -possible treatment for patients in immune active phase (elevated ALT, DNA >20,000IU/mL if HBeAg+ve, >2000IU/mL if eAg-ve)
-if HBsAg-ve: get HBsAb
    -if antibody +ve, patient is immune to Hep B, no follow up needed
    -if antibody –ve, vaccinate

Q3) Could this woman have cirrhosis?
-low platelet count should raise concern for portal hypertension even with relatively normal liver enzymes
-normal abdominal exam does not rule out cirrhosis
-progression to cirrhosis seen in 20-40% of men and 15% of women infected as infants/children

Q4) In a patient with chronic hepatitis B, what additional screening and management is necessary as part of the periodic health examination?
    -look for co-infections (HIV, HCV, HDV)

-patients in immune tolerant (eAg+ve, high DNA, normal ALT) and inactive (eAg-ve, low DNA, normal ALT) phases still need to have HBeAg, HBV DNA and ALT checked every 6 months
-annual platelet count as marker of cirrhosis
-annual ultrasound even if not cirrhotic
    -men > age 40
    -women > age 50
    -family history of HCC
    -patients with cirrhosis
    -African born starting age 20
-vaccinate for Hep A

Q5) If this patient were ultimately found to have cirrhosis, and required pain control for osteoarthritis, what medication would be safest?

- Emphasize no NSAIDS, avoid narcotics
- Tylenol safest agent

References:

1) Second Canadian Symposium on Hepatitis C Virus, *Can J Gastroenterol* 2013:27:627-632.
2)Screening for Hepatitis C Virus Infection in Adults: US Preventive Services Task Force Recommendation Statement, *Annals of Internal Medicine* 2013;159:349-358.
3) CDC Morbidity and Mortality Weekly Report 2012; 61:1-16.
4) New Hepatitis C Therapies: The toolbox, strategies, and challenges. *Gastroenterology* 2014; 146:1176-1192.
5) Chronic Hepatitis B Infection *Med Clin Nth Am* 2014; 98:39-54.
6) Hepatitis B learning needs assessment of family medicine trainees in Canada *Can J Gastroenterol* 2011;25:127-134.
7) Disease burden on chronic hepatitis B among immigrants in Canada *Can J Gastroenterol* 2013;27:137-147.