UPDATE LIVER DISEASE FOR YKHC CLINICAL STAFF

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CONFLICTS OF INTEREST

- Brian McMahon: None
- Lisa Townshend-Bulson: None
- Our Program has 2 research grants from Gilead Sciences neither of which funds any of our salaries

GOALS OF PRESENTATION

- Update Chronic Hepatitis B in YK Delta
  - Who to screen for hepatocellular carcinoma (HCC) with HBV
- Update of Hepatitis C: New Drugs/New challenges
- Very brief update on autoimmune liver disease in YK Delta
- NAFLD: The sleeping giant that has started pouncing on us

WHAT DOES LIVER CLINIC DO

- Follow patients with viral hepatitis B
- Follow/recommend treatment of those with hepatitis C
  - Continue to follow those with cirrhosis after treatment
- Assist PCPs with Work up patients with elevated liver function tests
- Consult on patients with hepatocellular carcinoma, fatty liver disease

CHRONIC LIVER DISEASE IN THE YK DELTA

Condition	Number
Chronic Hepatitis B	389
Chronic Hepatitis C	49; likely many more undiagnosed
Autoimmune Hepatitis (AIH)	8-10
Primary Biliary Cholangitis (PBC)	17-23
Non-Alcoholic Fatty Liver Disease (NAFLD)	Too many to count

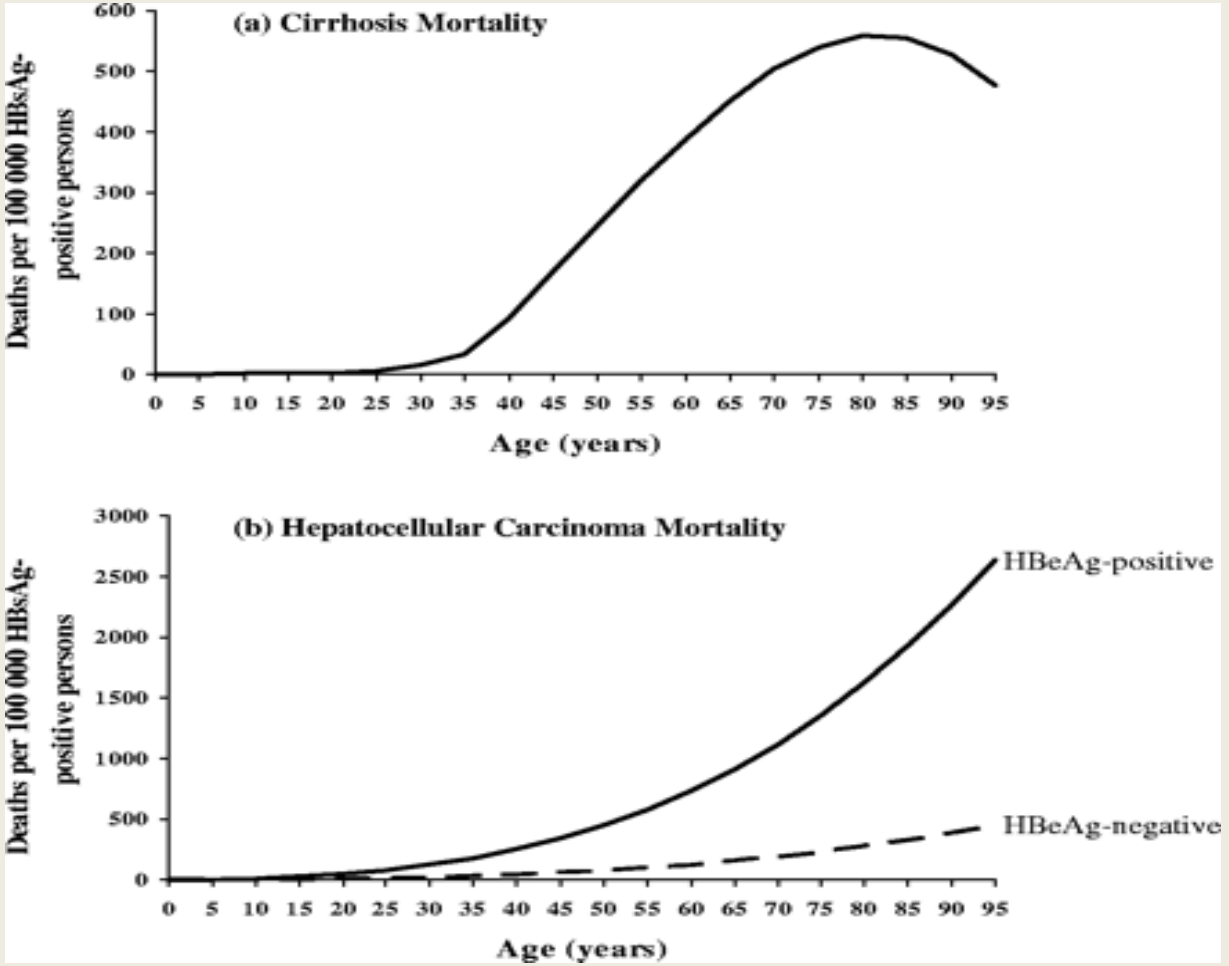
THEORETICAL (NOT REAL) PATIENT

- 46 y.o. female AN with ALT 130, AST 120 U/L. feels fine except slight fatigue.
- History hypertension, BMI 28, history elevated lipids
- Other lab, Hg 12, platelet count 115, alkaline phosphatase 150, albumin 3.4, total bilirubin 1.2. AFP 37 mg/ml
- What tests would you order and why.?
- When would you refer to liver clinic?

ALASKA NATIVE HEPATITIS B PROGRAM

- Universal HBV Newborn vaccination introduced in 1983
- Screening and Catch-up vaccination of children and adults: 1983-1988
  - 53,000 persons screened; ¾ of population, 90% in endemic areas of western Alaska
- No new cases of acute HBV in AN children since mid 1990's
- No more AN children <20 have chronic HBV infection
- Rates of liver cancer in children which were highest reported in world have fallen to zero since mid 1990's
- However, 1073 AN persons with chronic HBV remain: 389 (36%) in YK Delta
  - These persons have a 15%-40% lifetime risk of HCC

MATHEMATICAL MODEL: AGE-SPECIFIC HEPATITIS B-RELATED CIRRHOSIS AND HCC MORTALITY



Goldstein Int J Epidemiol 2005;34;1329-39

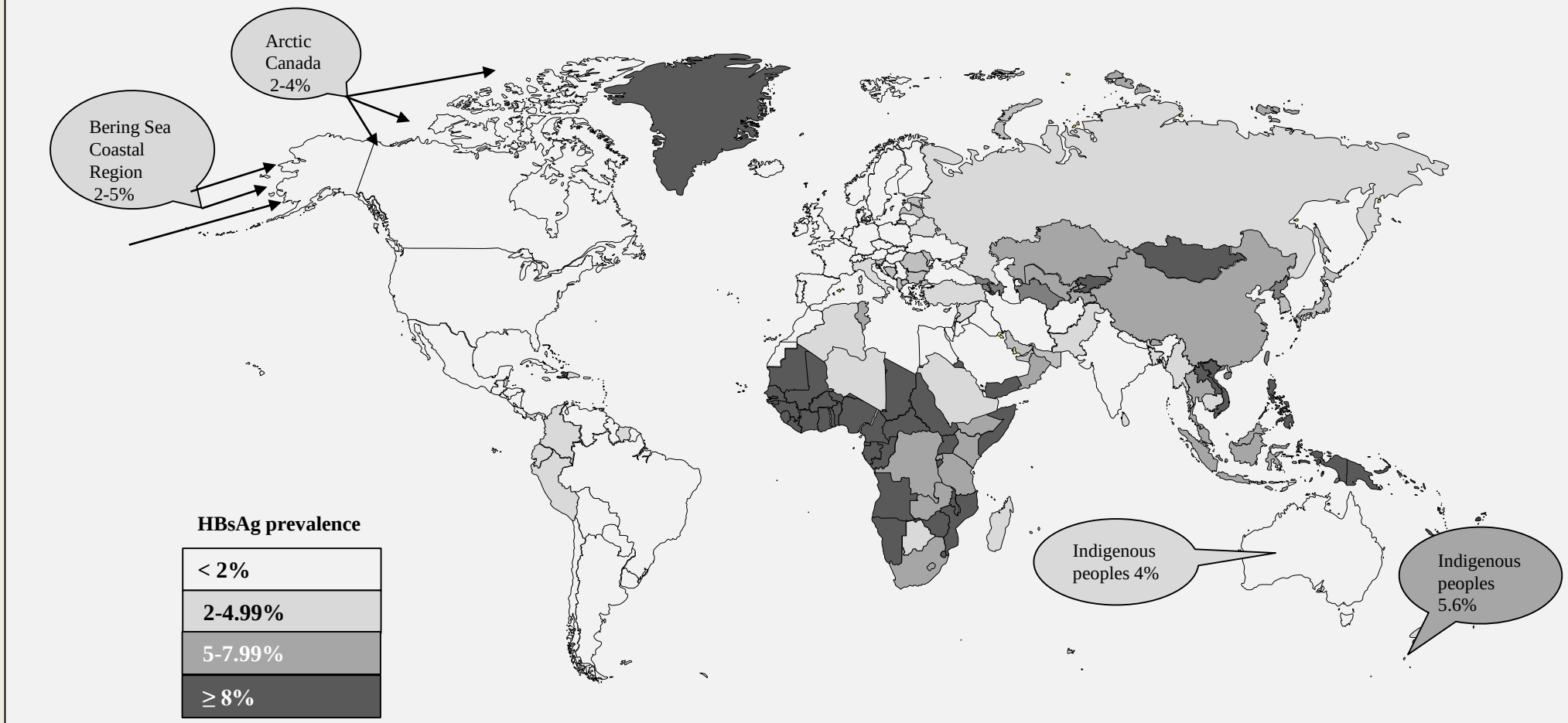
WHO IN YK DELTA SHOULD BE TESTED FOR HEPATITIS B

- Everyone
- Only those with abnormal LFTs
- Only those who did not receive hepatitis B vaccine
- Non-Alaska Native persons who were born in an endemic country for HBV or have a traditional risk factor (e.g. IDU or multiple sexual partners)
- No one since no transmission is occurring in YKD
- More than one answer can be correct

GOALS OF HEPATITIS B PROGRAM

- Continue immunization of all infants beginning at birth
- Monitor patients with chronic HBV every 6 months with liver function tests, HBV DNA and surveillance for liver cancer

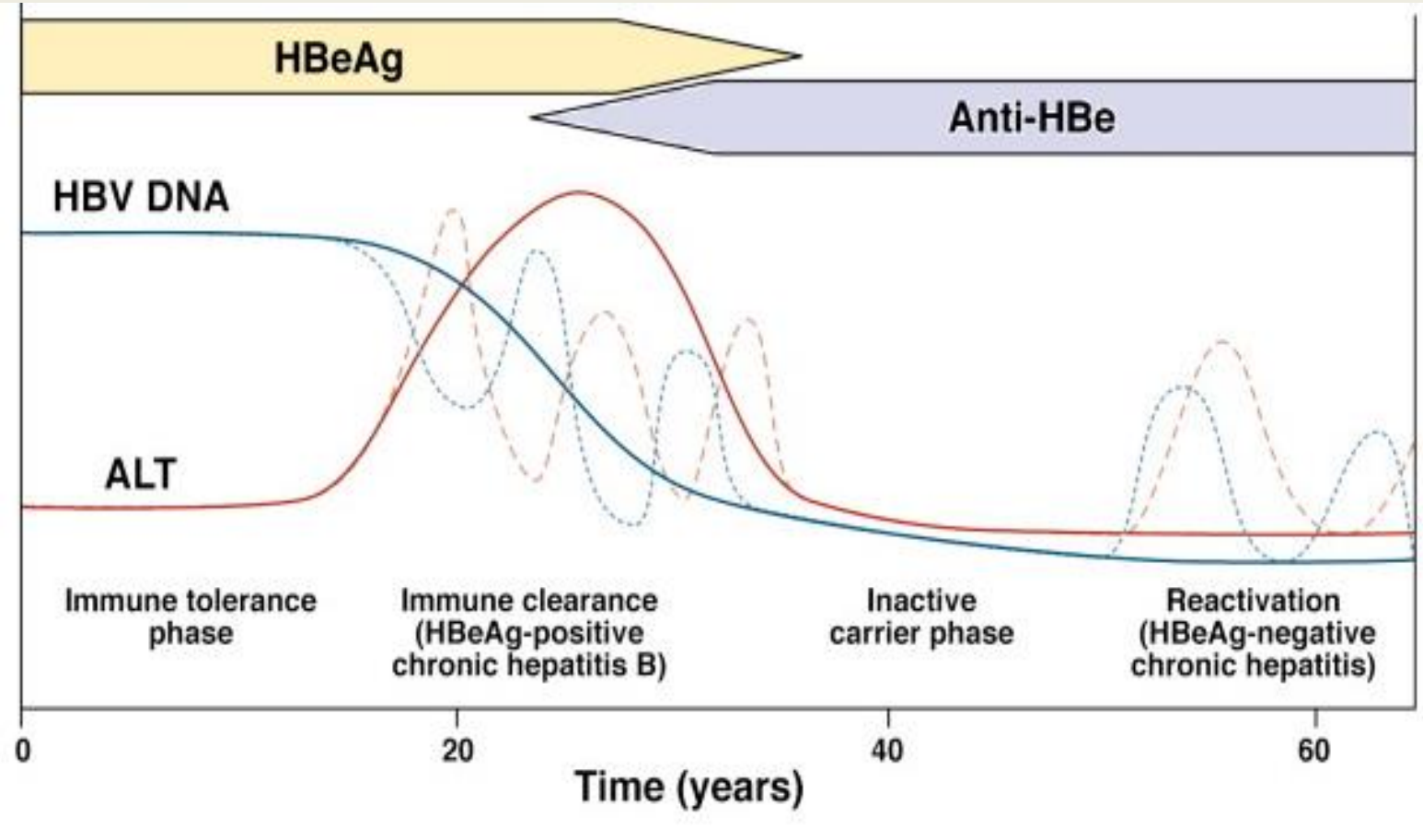
Global Prevalence of Chronic Hepatitis B



NATURAL HISTORY OF CHRONIC HBV INFECTION

- Chronic HBV infection has a complicated course.
- Patients can go from state of high viral load and no liver disease to one of active liver disease followed by inactive disease then revert back to active liver disease again
- Progression to advanced fibrosis can be rapid, slow or constant
- During the inactive periods fibrosis and even early cirrhosis can be reversed over time
- Bottom line: it's hard to predict what will happen to an individual with chronic HBV infection

Phases of Chronic Hepatitis B Infection



CANDIDATES FOR TREATMENT FOR CHRONIC HBV

- HBV cannot be cured
- Most patients don't need treatment
- Candidates for treatment are those with HBV DNA > 2,000 IU/ml and elevated LFTs with evidence of moderate or severe fibrosis by non-invasive serology tests, FibroScan or Liver Biopsy

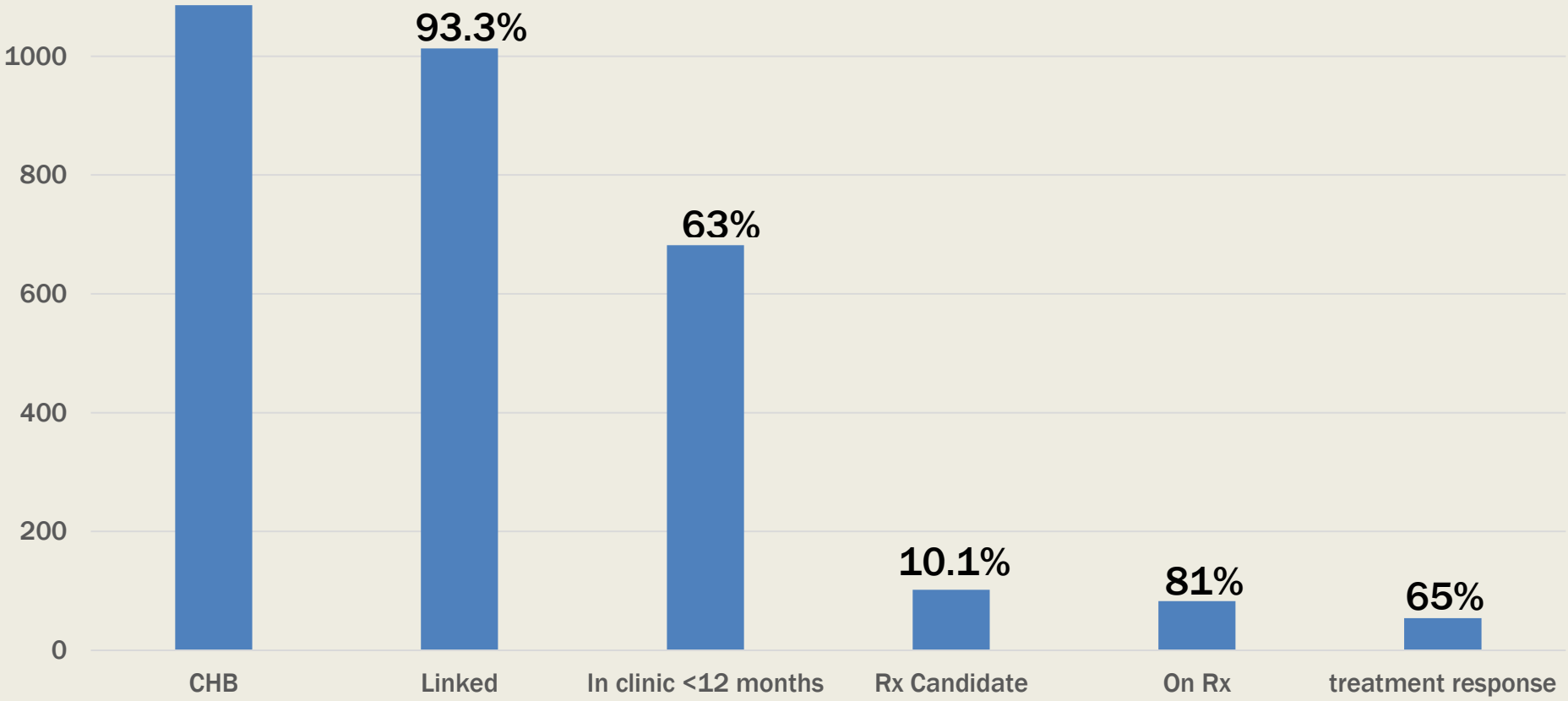
LAB RESULTS

Of the 1073 living:

676 (63%) had labs drawn within past 6-12 months

- 826 (77%) had labs drawn within 2 years
- 247 (23%) had labs drawn at interval > 2 years

LINKAGE TO CARE FOR ALASKA NATIVE PERSONS WITH CHRONIC HEPATITIS B



Treatment candidate^ HBV DNA > 20,000 IU/ml and ALT > 2 X ULN or HBV DNA > 2,000 IU/ml, elevated ALT and liver biopsy with moderate to severe fibrosis (Ishak 3-6 or Knodell 3-4) or inflammation (HAI ≥8) or receiving cancer chemo or immunosuppressive therapy

On Rx: On treatment displayed as % of total candidates

Response = % ALT<40. HBV DNA < 100 IU/ml

Unpublished data

USING AFP AND US TO SCREEN FOR HCC

- Since 1983, computerized registry used to follow patients with hepatitis B
- Letters sent every 6 months to remind patients to get labs drawn, including AFP
- Since 2015, letters sent to males ≥ 40 and females ≥ 50 to get screening US every 6 months

HEPATITIS B SCREENING THROUGH THE REGISTRY

Blood drawn in village clinic or hospital then centrifuged and separated

Sera mailed ANMC via YK hospital lab for liver panel, AFP and HBV DNA

Results downloaded and reviewed by Hepatologist and HBV Registry RN who make evaluation and treatment decisions

If labs are normal, letter is sent back to patient with results

Those with abnormal results are contacted by phone to arrange for radiographic studies if AFP > 10 mg/ml and those with abnormal liver function tests for further testing such as FibroScan and/or liver biopsy

If AFP > 10 ng/ml, patient is urged to go to nearest community for US: AFP has 95% negative predictive value; only 10% PPV

AASLD GUIDELINES

- Recommend HCC screening for persons with chronic HBV who have annual risk of 0.2%
  - At age 40 for men, 50 for women
  - All persons with cirrhosis at any age
  - In Alaska, all persons with HBV genotype F regardless of age
- HCC Lesions detected early that can be cured
  - Single lesions under 3cm diameter that can be treated with radio frequency ablation (RFA) at ANMC or surgical resection
  - Up to 3 lesions in one lobe with greatest not more than 5cm and total diameter of all lesions not more than 7% can be referred for liver transplant: 5-year tumor free survival 70%
- Palliative therapy: can extend life by several years
  - Chemoembolization
  - Repeated RFA of small lesions
  - Other

RFA ELECTRODE

RFA GENERATOR

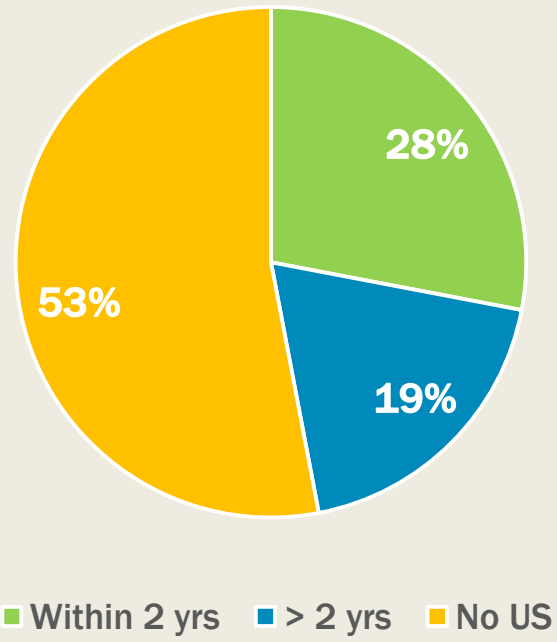
ABLATION DEMO

rita animation.mpg

US RESULTS

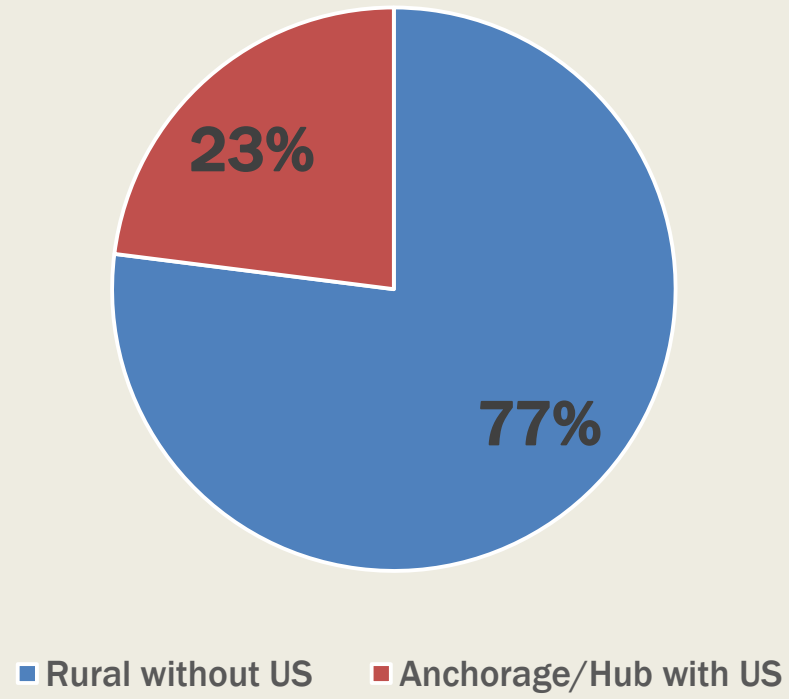
Of the 770 living in Alaska who met criteria for US:

- 219 (28%) had an US within 2 years
- 147 (19%) at interval > 2 years
- 434 (53%) had no record of US



US RESULTS, URBAN VS. RURAL

Of the 434 who did not have US within 2 years:
77% lived in rural villages without US



DETECTING HCC

Through 2016, 53 AN/AI persons with HBV diagnosed with HCC (since start of registry)

31 diagnosed at curable stage*

- 9 living, an average of 16.8 years past HCC diagnosis giving them 152 additional life-years to date

* Curable stage defined as single tumor < 5cm, or 3 tumors < 3cm size each, or no tumor recurrence within 5 years

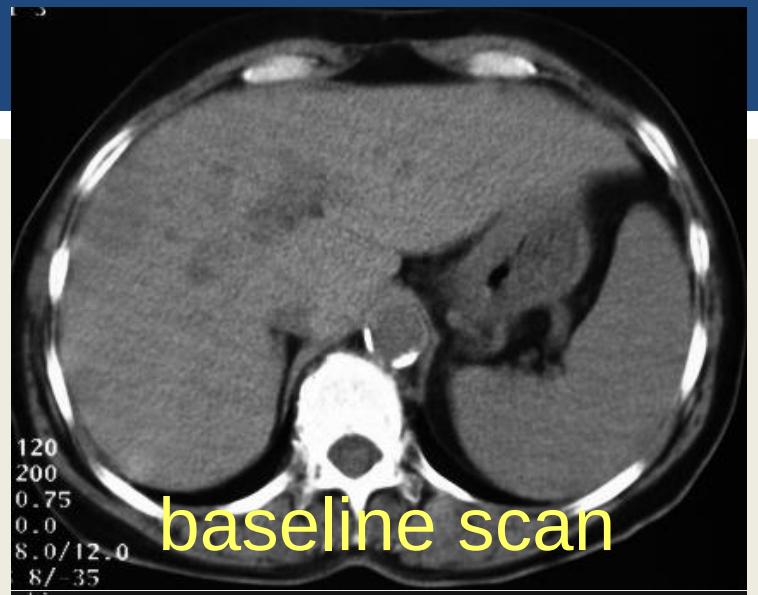
HOW CAN WE DO BETTER JOB OF GETTING US SURVEILLANCE RATE IMPROVED

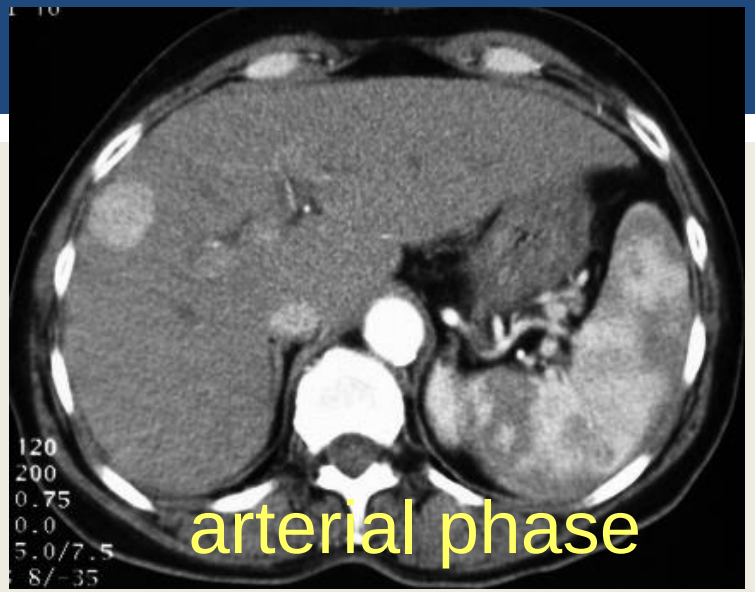
- Identify all patients in YKD who are candidates for US
- Attempt to get them all on Medicaid. Medicare or private insurance
- If not rely on AFP and if > 10, bring them to Bethel for liver US

HEPATITIS CARE SHEETS

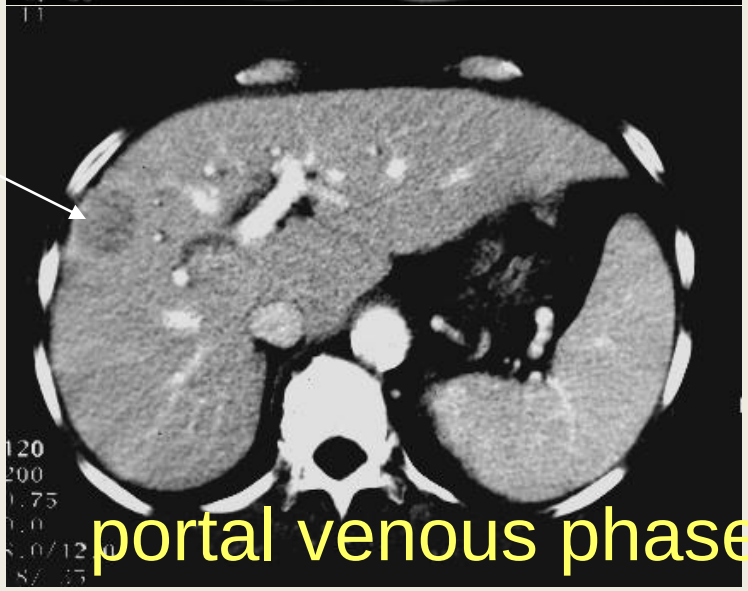
- See Handouts at back of room

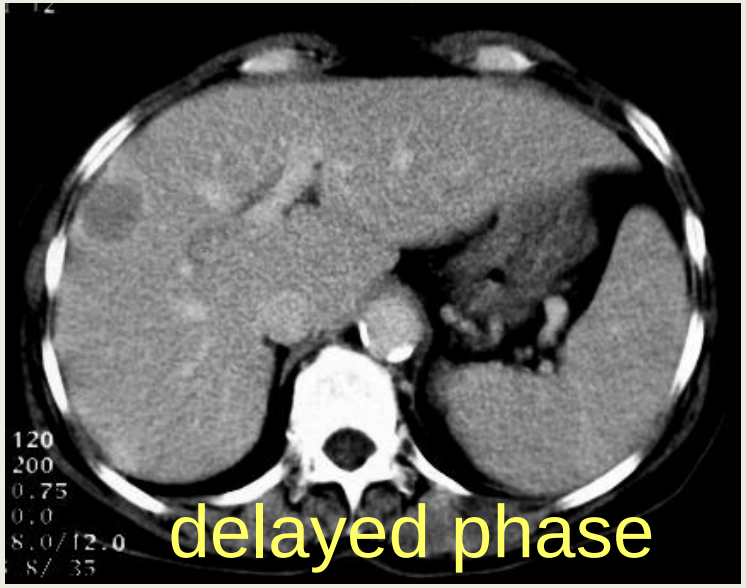
CT FOR HEPATOCELLULAR CARCINOMA





Washout Phase





FUTURE HCV TREATMENT

AK LiverConnect - Project Echo style consultation for primary care with ANTHC Liver Disease Specialists

- Coming soon
- When is best time/day of week?

VTC Clinics – ANTHC Specialists with patients in remote villages

IT'S AS EASY AS KNOWING THESE 3 DRUGS

- Glecaprevir/Pibrentasvir (Mavyret™)
  - Treats all genotypes
  - 8-12 weeks treatment
  - Noncirrhotic or mild cirrhosis only
- Sofosbuvir/Velapatasvir (Epclusa®)
  - Treats all genotypes
  - 12 weeks treatment
  - Safe in decompensated cirrhosis
- Ledipasvir/Sofosbuvir (Harvoni®)
  - Treats genotypes 1, 4, 5, and 6
  - Safe in decompensated cirrhosis
  - 8 weeks duration for some genotype 1

GLECAPREVIR/PIBRENTASVIR (MAVYRET™)

MAVYRET SVR*

- w/o cirrhosis
  - GT 1 – 99%
  - GT 2 98%
  - GT 3 – 94.9%
  - GT 4, 5, or 6 – 93-100%
- w/compensated cirrhosis
  - GT 1 – 99%
  - GT 2 – 100%
  - GT 3 – 98%
  - GT 4, 5, or 6 – 100%

*Sustained Virologic Response

LEDIPASVIR/SOFOSBUVIR (HARVONI®)

- Genotypes 1, 4, 5, and 6
- Side effects:
  - fatigue (16%)
  - headache (14%)
- Decreased absorption with acid-suppressing medications
- Safe in severe hepatic impairment (CTP Class A, B, or C)
- Safe in mild to moderate renal impairment (GFR ≥ 30)
- Sustained virologic response ≥ 95%

1 pill/day

SOFOSBUVIR/VELPATASVIR (EPCLUSA®)

- All genotypes
- Decreased absorption with acid-suppressing medications
- Safe in severe hepatic impairment (CTP Class A, B, or C)
- Safe in mild/moderate renal impairment (GFR ≥ 30)
- Side effects: Headache (~22%), Fatigue (~16%), Nausea (~9%)
- Sustained virologic response GT 1,2,4,5,6:

  > 99% w/o cirrhosis or w/compensated cirrhosis
- SVR GT 3: 98% w/o cirrhosis and treatment naïve

  93% w/compensated cirrhosis and treatment naive

1 pill/day

CORRECTLY DOSING ACID SUPPRESSING DRUGS W/HARVONI OR EPCLUSA

Acid reducing agents decrease absorption (of NS5A) negatively affecting cure if not dosed correctly.

- Antacids – Separate dosing from Harvoni or Epclusa by 4 hours
- H_2-receptor antagonists - Admin simultaneously with or 12 hours apart. Dose not to exceed equivalent to famotidine 40mg daily
- PPI's (omeprazole 20mg) are different
  - Not rec w/Epclusa. If necessary admin. 4 hours after Epclusa and take Epclusa w/food.
  - Admin simultaneously with Harvoni. Dose not to exceed 20 mg.

WHAT DO YOU NEED TO KNOW TO TREAT HEPATITIS C?

- Is your patient ready?
  - Adherence, adherence, adherence
  - Drug and alcohol abstinent/in treatment
- Pretreatment labs – See HCV care information sheet
- How will the medication be funded?
  - complete prior authorization/patient assistance forms
- Choose a regimen
- Check for SVR 12 weeks after treatment completion

DETERMINING FIBROSIS STATUS

- APRI - AST to Platelet Ratio Index
- Serologic tests – FibroTest/FibroSure, etc.
- Transient Elastography

  FibroScan – ANMC
- Nodularity on liver ultrasound
- Liver biopsy - Historically Gold Standard

Not Sure or Cirrhotic? – Consult or Refer

HBV/HCV COINFECTION – RISK OF REACTIVATING HBV W/DAA* THERAPY

- Assess
  - HBV coinfection prior to initiating DAA therapy

- HBsAg+ and/or anti-HBc+ ?
  - HBV DNA pretreatment and monthly during treatment
  - 12 weeks post treatment

GENOTYPE 3
Y93H POLYMORPHISM STATUS (IF CONSIDERING TREATMENT W/SOF/VEL)

12 weeks of SOF/VEL (Epclusa)

- No polymorphism - SVR12 = 97%
- Present - SVR12 = 80%
- Present w/compensated cirrhosis – SVR12 = 67%

"Pending further data on optimal therapy in the setting of baseline Y93 polymorphism, the addition of ribavirin for patients with cirrhosis is recommended."

AASLD/IDSA HCV Treatment Guidelines

RAS* TESTING FOR GENOTYPE 3

- Test name:
  - HCV RNA Genotype 3 NS5a Drug Resistance
- Test code: 93325 (Quest)
- Specimen: 2mL plasma in lavender-top tube
- Results: Will list mutations detected and susceptibility to velpatasvir and daclatasvir
  - Not Predicted – Pt's HCV is susceptible
  - Probable – Pt's HCV is resistant (occurs <10%)
    - Consult w/ Liver Clinic Providers
    - Add ribavirin to regimen

    - * Resistance associated substitiutions

AFTER SVR

- For those without advanced liver disease
  - Follow up same as though they were never infected with hepatitis C – Discharge from liver clinic
  - Assess for recurrence only if risk factors are present or unexplained elevation of ALT
  - HCV RNA preferred test as HCV antibody will remain positive
- Cirrhotic and advanced fibrosis patients
  - Continue HCC surveillance RUQ US/AFP 6 months
  - Yearly liver clinic visit

RETREATMENT – CONSULT BEFORE TREATING

- Consult Liver Disease Specialist
- Options
  - Vosevi® (Sofosbuvir/Velpatasvir/Voxilaprevir)
  - Mavyret™ (Glecaprevir/Pibrentasvir)
  - Epclusa® (Sofosbuvir/Velpatasvir) w/ribavirin
  - Harvoni® (Ledipasvir/Sofosbuvir) w/ribavirin
- Check for NS5A and NS3 resistance if Genotype 1
- Check for NS5A resistance if Genotype 3

PHARMACEUTICAL SUPPORTED PATIENT ASSISTANCE PROGRAMS

AbbVie (Mavyret) Patient Assistance 1-877-628-9738 (call for Pt. assistance form)

BMS (Daclatasvir) 1-844-442-6663

patientsupportconnect.com

Gilead Support Path (Sovaldi, Harvoni, Epclusa) 1-855-769-7284

mysupportpath.com

Moderiba (Ribavirin) 1-844-663-3742

moderiba.com/patient-support/financial

Merck Access Program (Zepatier) 1-866-251-6013

Merckaccessprogram-zepatier.com

OTHER PATIENT ASSISTANCE PROGRAMS

Partnership for Prescription Assistance 1-888-477-2669

www.pparx.org

Patient Access Network Foundation 1-866-316-7263

www.panfoundation.org

Chronic Disease Fund 1-877-968-7233

www.cdfund.org

Needymeds.org 1-800-503-6897

www.needymeds.org

PREVALENCE OF NAFLD IN SELECTED CONDITIONS

- Type 2 Diabetes: 69%-87%
- Bariatric surgery (90% with 5% cirrhosis)

CURRENT AND PROJECTED IMPACT AND COST OF OBESITY IN US

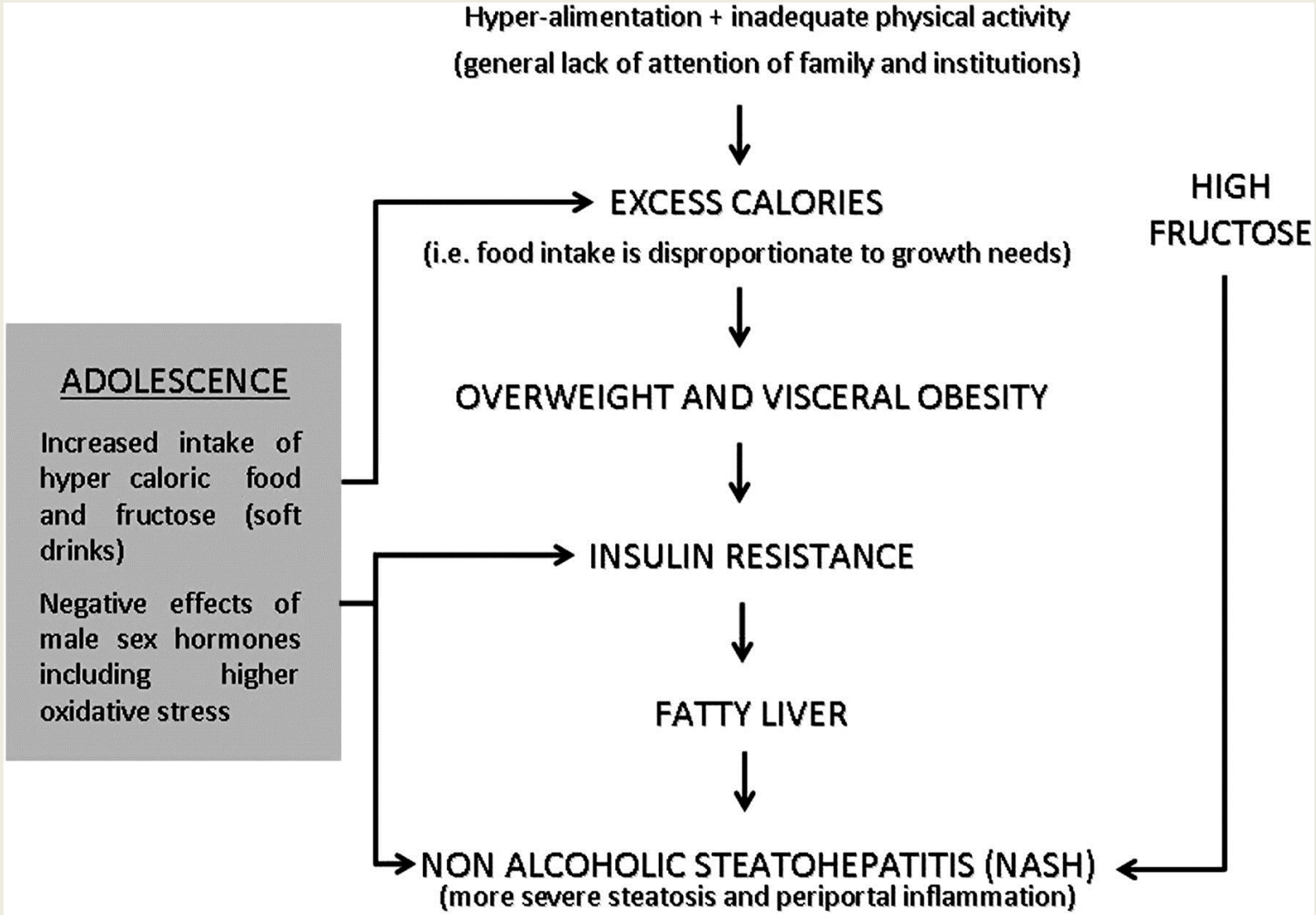
- Projection for 2018 based on increase in rate of obesity in past 10 years
  - National obesity rate: 50%
  - Annual health cost of obesity: 344 Billion

Source: 2009 America's Health Ranking Study

PREVALENCE OF NAFLD IN SELECTED CONDITIONS

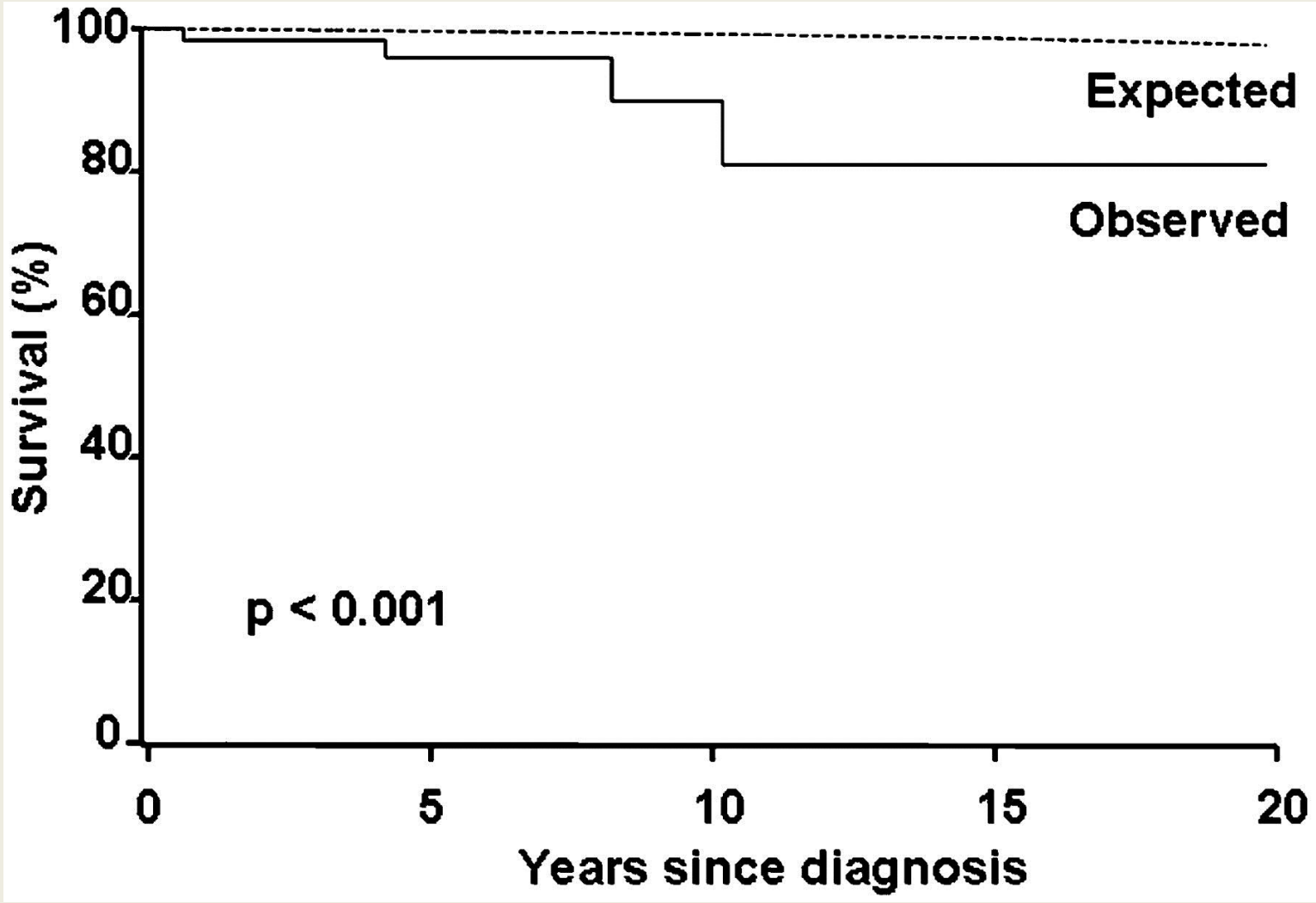
- Type 2 Diabetes: 69%-87%
- Bariatric surgery (90% with 5% cirrhosis)

Pathogenesis of NAFLD/NASH



Nobili and Pinzani. Gut 2010;59:561-4

Projected Survival of Children with NAFLD over 20 Years Compared to General Pediatric Population



Feldstein et al. Gut 2009;58:1138

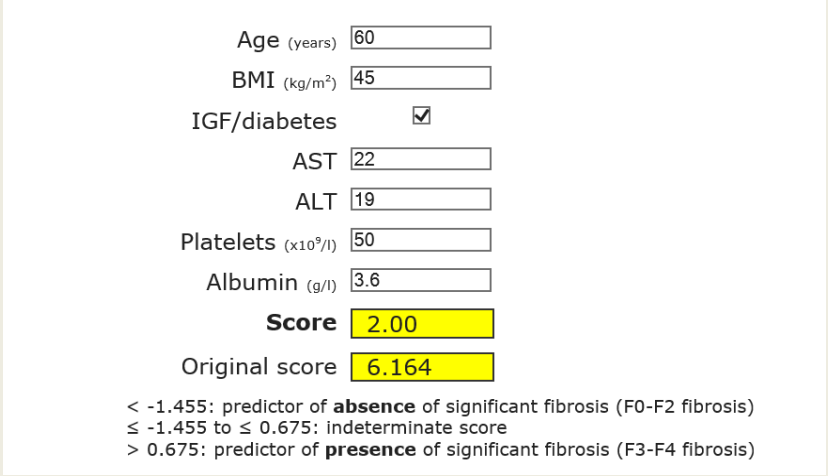
NASH: PATHOLOGY

- Definition: Steatosis plus steatohepatitis: inflammation and scarring: Occurs ~20% NAFLD
- In Adults with NASH, prevalence:
  - Cirrhosis: 8% to 20%
  - Fibrosis (septal): 21%
- Progression:
  - 43% risk of fibrosis progression
  - Etiology of cases of cryptogenic cirrhosis
  - <5% of children have cirrhosis

NAFLD GUIDELINE RECOMMENDATIONS

NON-INVASIVE ASSESSMENT

- NAFLD Fibrosis Score is a clinically useful tool for identifying NAFLD patients with higher likelihood of having bridging fibrosis and/or cirrhosis
- Get App to use in clinic
- nafldscore.com



EVALUATION OF PATIENT WITH ABNORMAL LFT AND METABOLIC SYNDROME

- In persons with elevated ALT, rule out other causes of liver disease
  - Chronic viral hepatitis: anti-HCV and HBsAg
  - Autoimmune liver disease: ANA, smooth muscle antibody, AMA, IgG, IgM, CBC
  - Wilson's disease: ceruloplasmin
  - Hemochromatosis: iron saturation
  - Drugs which can cause elevated LFT's
  - Alcohol abuse

WHEN TO CONSIDER A LIVER BIOPSY

- Diagnosis uncertain
- Non-invasive test with higher risk for NASH with advanced fibrosis
  - NAFLD fibrosis score:
    - Nafldscore.com: AOC 0.85
    - FibroScan > 7-8 kPa

TRANSIENT ELASTOGRAPHY

- Allows painless and simultaneous measurement of two quantitative parameters:
- Liver stiffness expressed in kPa
  - Correlated to liver fibrosis [1]
- Controlled Attenuation Parameter (CAP™) expressed in dB/meter
  - Correlated to liver steatosis [2]
- Both quantitative parameters are assessed on the same volume of liver tissue
- 100 times bigger than liver biopsy

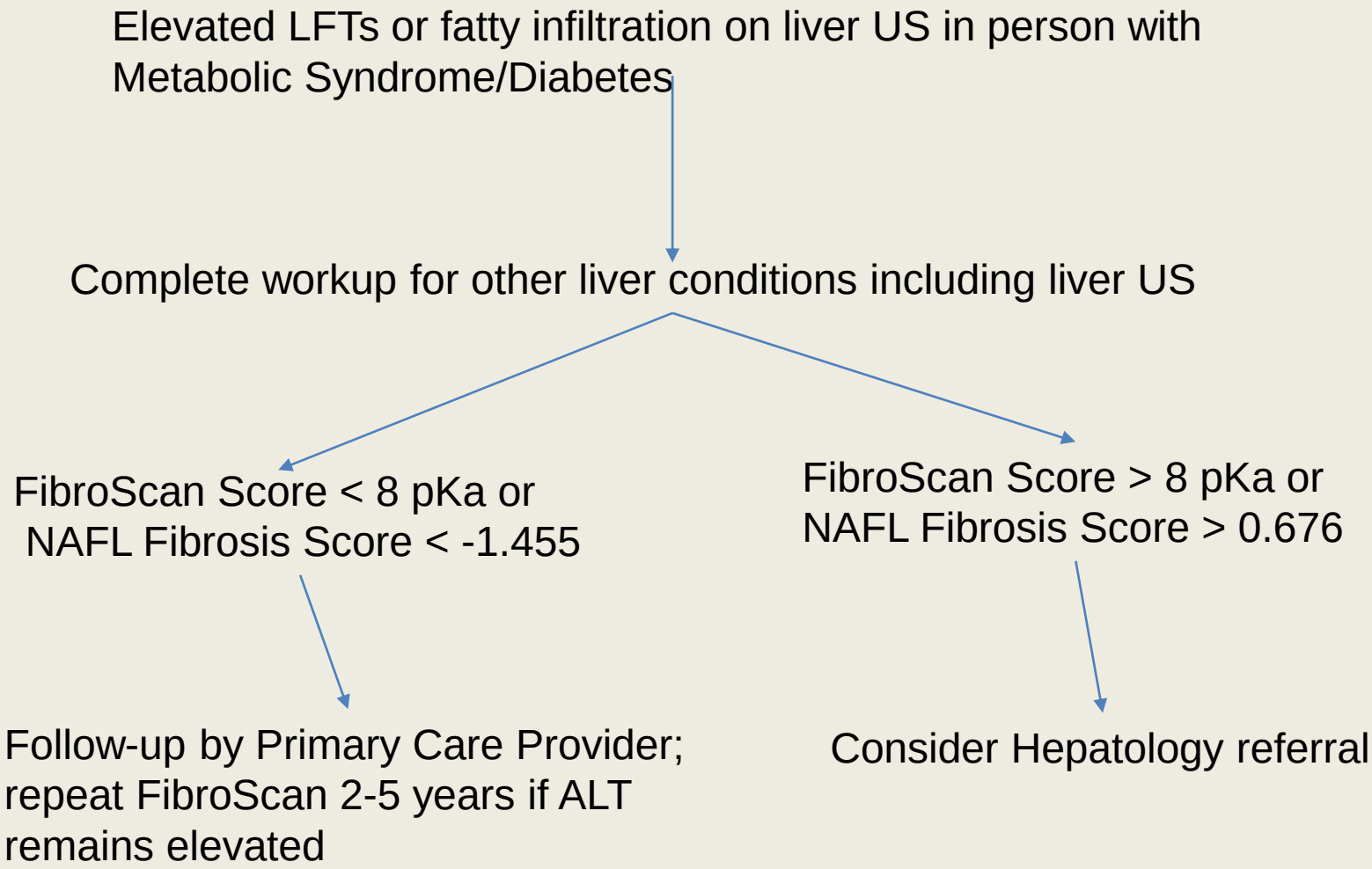
1. Friedrich Rust, et al. *Gastroenterology*. 2008; 2. Sasso, et al. *Journal of Viral Hepatitis*. 2011.

TRANSIENT ELASTOGRAPHY

- Measures velocity of a low-frequency (50 Hz) elastic shear wave propagating through the liver
  - Normal liver: ~5.5 kPa: Reading below 7-8 kPa corresponds with no/minimal fibrosis
- Good performance for excluding advanced stage disease (stage 3-4)
- User-friendly, short procedure time
- Problems still with severe obesity, ascites, operator experience
  - CAP software may help: it estimates amount of liver fat
- False positives: acute hepatitis, extrahepatic cholestasis and congestion
- Fibroscan VCTE, one method of TE, has an XL probe:

Castera L. *Nat Rev Gastroenterol Hepatol*. 2013.

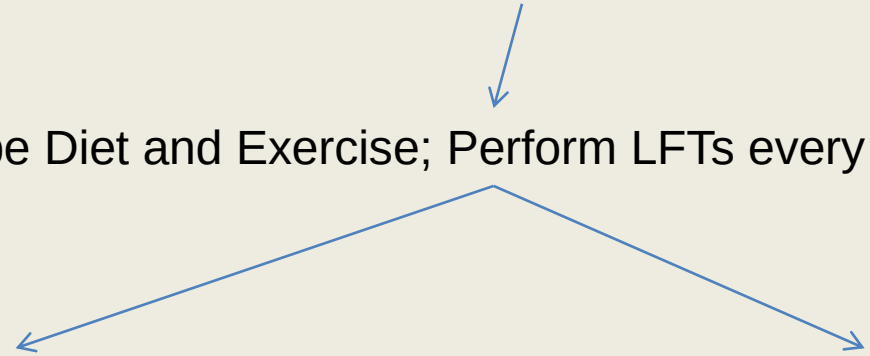
Evaluation of Suspected NAFLD



TREATMENT OF NAFLD/NASH

- No evidence-based guidelines available
- Goal: normalize liver enzymes or improve liver biopsy findings
- Weight loss diet recommended
- Exercise recommended
- Medication:
  - Vitamin E?

Considerations for Primary Care Providers for Following Patients With NAFLD without NASH

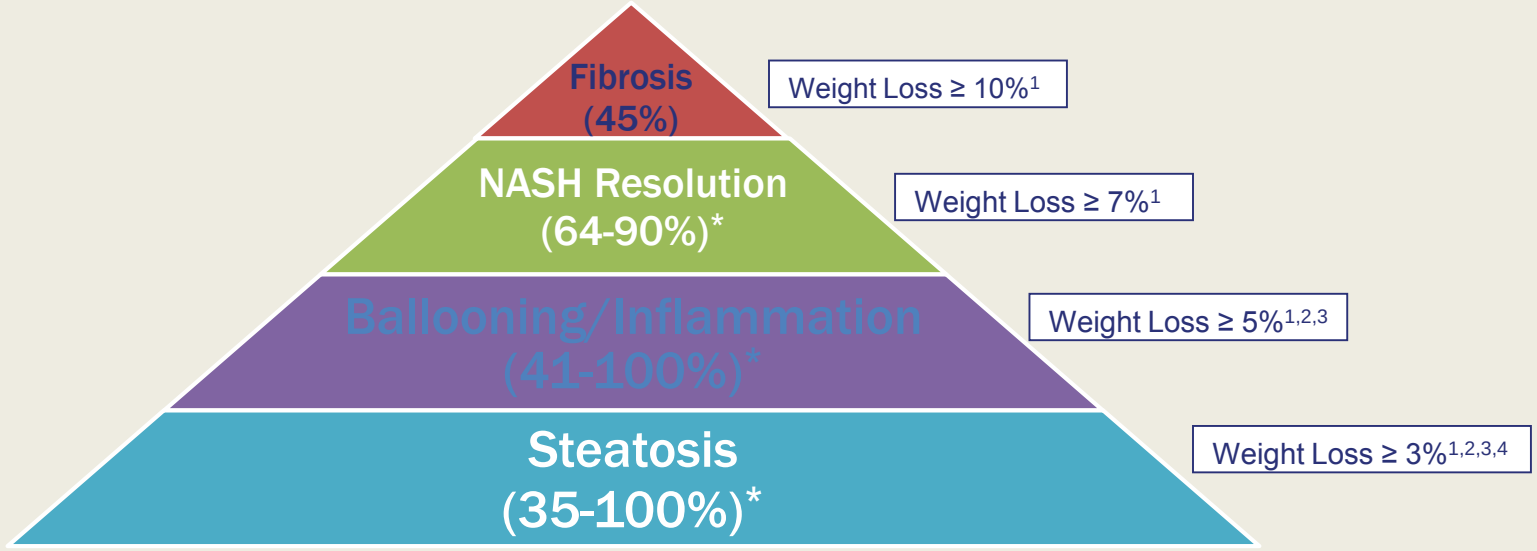


Prescribe Diet and Exercise; Perform LFTs every 6-12 months

Consider Repeat FibroScan in 2-5 years if < 7% weight loss and LFTs still elevated

Consider Repeat FibroScan with CAP in 6-12 months if patient loses 7%-10% of body weight to measure change in amount of steatosis

WEIGHT LOSS PYRAMID



1. Vilar-Gomez. *Gastroenterology* 2015; 2. Promrat. *Hepatology* 2010; 3. Harrison. *Hepatology* 2009; 4. Wong. *J Hepatol* 2013
*Depending on degree of weight loss

AASLD/AGA/ACG PRACTICE GUIDELINE DIAGNOSIS AND MANAGEMENT OF NAFLD: REVISED 2012

- No specific pharmacologic treatment has been shown to be effective
  - Weight loss: 5% ↓ steatosis: 10% ↓ necroinflamation
  - Exercise: ↓ fat in MRI in 6-12 wks
  - Lower cholesterol and triglycerides in persons with hyperlipidemia: no contraindications to statins but benefit for NAFLD unknown

Found at aasld.org click on practice guidelines then click on NAFLD

EXERCISE AND DIET

- Exercise:
  - Daily: 30 – 60 minutes 5 times per week
  - 12,000 steps/day = 400 kcal
  - Helps achieve weight loss
  - Improves insulin sensitivity
- Weight Loss:
  - Goal 10-15 lbs/year
  - Equivalent to 100-150 calories/day (decrease daily portions by 7%-10%)
- Can use CAP scores to follow diet/exercise progress for liver fat

NAFLD GUIDELINE RECOMMENDATIONS

- Pioglitazone can be (?) used to treat steatohepatitis in patients with biopsy-proven NASH. (Strength - 1, Evidence - B)
  - However, the majority of patients who participated in clinical trials that investigated pioglitazone for NASH were non-diabetic
  - Long term safety and efficacy of pioglitazone in patients with NASH is not established

NAFLD GUIDELINE RECOMMENDATIONS

- Vitamin E (a-tocopherol) administered at daily dose of 800 IU/day improves liver histology in non-diabetic adults with biopsy-proven NASH and therefore should be considered as a first-line pharmacotherapy for this patient population.

COMPETITIVE LANDSCAPE IN NASH

CLINICAL DEVELOPMENT PIPELINE

Company	Product	MoA	Phase	Condition	Timeline	Endpoint
GENFIT	GFT_{505}	PPAR α/δ agonist	3	NASH	Beginning late 2015	
INTERCEPT (NIDDK)	OCA	FXR agonist (bile acid)	3	NASH	Beginning 2015	Co=primary 1. Reversal of NASH without worsening of fibrosis 2. Improvement in fibrosis without worsening of NASH
CENTAUR	Cenicriviroc	Inhibitor of ligand binding to CCR2/CCR5	2a	Liver fibrosis/NASH	Enrollment complete	Improvement of NAS (by 2 points) and no worsening of fibrosis
GILEAD	Simtizumab	Mab against $LOXL_2$	2b	Liver fibrosis/NASH	Enrollment complete	Change in morphometric quantitative collagen
NGM Biopharm	NGM282	FGF 19 agonist	2a	NASH	Enrolling	Change in hepatic fat by MRI
Immuron	IMM-124E	Hyperimmune bovine colostrum	2a	NASH	Enrolling	Change in hepatic fat by MRI
GALMED	Aramchol	Synthetic Fatty Acid/ bile acid conjugate	2b	NASH	Enrolling	Change in hepatic fat by MRI
GALECTIN	$GR\text{-}MD\text{-}_{02}$	Galectin-3 inhibitor	2a	Liver fibrosis/NASH	Enrolling	Safety (+ elevation of liver in enzymes)

STATINS AND ABNORMAL LFTS

- Severe hepatitis due to statins idiosyncratic and very rare
- Kaiser study 23,000 persons incidence of ALT > 10 x ULN due to statins was 0.1% (1 per 1,000)
- Black Box warning should be removed

Am J Med 2005;118:618-24

NAFLD AND STATINS

- Recent study: persons with ↑ LFT put on statins:*
  - Had ↓LFT ($p<0.0001$) and those not put on statins had significant increase
  - Lower risk of cardiovascular events than those on not statins ($p<0001$)
- Greek study in patients with CAD and NAFLD
  - 437 pts with elevated LFT
    - 237 treated with statin improved LFT
    - 210 not treated increased LFT ($p<0.0001$)
    - Significant decrease in cardiovascular events in treated vs. non treated ($p<0.0001$)^

*Gut 2011;376:1916-22 ^Lancet 2010;376:1916-22

KALADI'S AND NAFLD

- 306 patients: significant correlation between coffee caffeine consumption and lower -NAFLD/NASH fibrosis score on liver biopsy
  - Molloy et al. Hepatology 2012;55:429-36

COMMUNITY NUTRITIONAL AND EXERCISE PROGRAMS AND NAFLD

- Promote consumption of traditional Foods
- Increase Physical education in schools to 30-60 minutes/day K-12 grades
- Promote preschool exercise activities
- Foster community gyms and exercise programs for adults in communities
  - Example SCFs exercise facility and program in Anchorage
- Tax fructose containing drinks in Alaska communities
- Remove obesity promoting foods from food stamp programs

OUR THEORETICAL PATIENT

- Testing done at YKD Hospital
  - Lab tests: anti-HCV negative, ANA + 1;80, IgG 1700 rest of lab negative
  - Liver US: dense liver, borderline enlarged, 2cm hypoechoic. lesion spleen borderline enlarged, portal vein flow hepatopedal (normal)
  - Tri-phasic CT scan
- Testing done at ANMC
  - FibroScan 12 pKa, CAP score is 270 dB/m: interpretation fibrosis present, amount not defined, moderate steatosis
- What next?
  - RFA with biopsy of lesion and ablation of tract
  - Liver biopsy to r/u autoimmune hepatitis at time of RFA

ANTHC LIVER DISEASE & HEPATITIS PROGRAM

Visit our website:
anthctoday.org/hep

LiverConnect
2nd Tuesdays,
8-9am AK time
(4pm GMT)
CEUs provided

Next: October 10
FibroScan – Dr. Barbour