ONE-PAGER FOR STEATOTIC LIVER DISEASE YOU MAY USE TO IMPROVE YOUR PATIENT'S LIVER HEALTH

INITIAL INVESTIGATIONS

- Bloodwork over a period of 2-6 months to establish trends: check liver functions (INR, Total/Direct Bilirubin, and Albumin), liver enzymes (AST, ALT, Alkaline Phosphatase), CBC, Urea and Creatinine.
- Once yearly: calculate **FIB-4 score** based on your patient's age, AST, ALT, and platelet counts (https://www.mdcalc.com/calc/2200/fibrosis-4-fib-4-index-liver-fibrosis) to estimate the severity and the trending of your patient's liver disease. If FIB-4 score is less than 1.5 for patients between 35-65 years of age, or less than 2.0 in patients 65 years or older, it is very unlikely they have advanced liver disease.
- Assess for Metabolic Syndrome: waist circumference and/or BMI, blood pressure, HgA1C, HDL-cholesterol and Triglycerides at least once a year. Please manage these comorbidities as you would with any other patient.
- If not already done, exclude other relevant treatable causes of liver disease: Anti-HCV Ab, HBsAg, Iron studies with % saturation (if % saturation is $\geq$ 45, please order HFE-gene test for hereditary hemochromatosis). If your patient is under the age of 45, also screen for Wilson's disease with serum Ceruloplasmin level.
- Ensure there is a baseline upper abdominal imaging focusing on the liver to rule out liver masses, biliary disease, or evidence of portal hypertension (splenomegaly and dilated portal vessels). **ISOLATED LOBULATED LIVER SURFACE IS COMMON IN PATIENTS WITH STEATOTIC LIVER DISEASE AND SEVERE STEATOSIS DOES NOT CORRELATE WITH EXTENT OF FIBROSIS OR PROGNOSIS.** If your patient has liver mass/lesion, consider referral to one of our four hepatobiliary surgery colleagues.

INTERVENTIONS

- If your patient has a high BMI, especially greater than 30, he/she should lose at least 7-10% of his/her body weight over the next 6-12 months and keep it off; this is the only intervention that has been shown to halt liver disease progression. Consider referral to a dietician and/or exercise program. Dietary considerations include decrease in total daily calories with inclusion of proteins and vegetables with every meal and avoidance of saturated fats, simple carbohydrates (especially fructose) and sweetened beverages. Also ask your patient to take vitamin D supplement at minimum of 1,000 IU daily.
- Prescribe exercise for 30 minutes of moderate physical activity four times per week. Encourage your patient to try brisk walking, running, cycling, elliptical/treadmill, stationary/recumbent bike, climbing stairs or swimming, as examples.
- In general, in individuals with steatotic liver, alcohol consumption should be avoided. **HEPATOLOGIST ARE NOT EXPERTS IN MANAGEMENT OF ALCOHOL USE DISORDER.** Also remind your patient that each alcohol drink contains approximately 150 calories so reducing alcohol intake will help your patient lose weight if their BMI is greater than 25. Refer to Canadian Centre on Substance Use & Addiction guidance (https://ccsa.ca/sites/default/files/2023-05/CGAH-Drinking-Less-is-Better-en.pdf).
- Modify cardiac risk factors in your patients with steatotic liver since they are at higher risk for developing cardiac disease (3 to 5 times more likely to suffer a heart attack or stroke). These patients with increased LDL-cholesterol should be considered for statin therapy. In general, statin therapy is safe in patients with steatotic liver.
- If your patient has diabetes mellitus and metabolic syndrome, please manage them as you do any of your other patients. Optimize diabetes control, treat hypertension, and encourage smoking cessation. If you require assistance with this, you may consider referring them to your local specialists in General Internal Medicine or Endocrinology.
- If your patient has high BMI, screen and treat for obstructive sleep apnea. This may contribute to the general lassitude that patients with liver disease describe.

INFORMATION FOR PATIENT AND FAMILY

The **Canadian Liver Foundation** (Liver.ca) has resources for patients to review.

INDICATIONS FOR REFERRAL (BASED ON CURRENTLY AVAILABLE RESOURCES)

While all patients with steatotic liver disease may benefit from hepatology consultation, our office is being overwhelmed by an increasing number of referrals. There are over 200,000 adult Nova Scotians with steatotic liver disease and our office was never resourced to accommodate so many requests. WE ARE TRYING TO DO OUR BEST AND FOCUSING ON THE MORE URGENT AND/OR ADVANCED TREATABLE CASES.

For now, we can see your patient with steatotic liver disease who develop clinically significant ascites due to liver disease (in spite dietary sodium restriction and initiation of combination of spironolactone and furosemide), or if they have moderate to severe liver dysfunction (INR greater than 1.7 (off warfarin/DOACs), Total Bilirubin higher than 50 umol/L) for more than 1 month. Please note that your local general internal medicine specialist has expertise in the initial investigation and management of deterioration of your patient's liver health. We can help them care for your patient.

If your patient has treatable liver disease including viral hepatitis B or C, hereditary hemochromatosis, Wilson's disease, or one of the immune-based liver diseases like autoimmune hepatitis, primary biliary cholangitis or primary sclerosing cholangitis, you may consider referral as soon as therapies for metabolic syndrome has been initiated.

The article titled CIRRHOSIS: DIAGNOSIS AND MANAGEMENT published in the American Family Physician journal is an excellent resource https://www.aafp.org/pubs/afp/issues/2019/1215/p759.html . In some patient you may consider a virtual appointment with a hepatologist, please sign into VirtualHallway.ca