Body System: Gastrointestinal

Session Topic: Liver Function Tests

Educational Format		Faculty Expertise Required
REQUIRED	Interactive Lecture	Expertise in the field of study. Experience teaching in the field of study is desired. Preferred experience with audience response systems (ARS). Utilizing polling questions and engaging the learners in Q&A during the final 15 minutes of the session are required.
OPTIONAL	Problem-Based Learning (PBL)	Expertise teaching highly interactive, small group learning environments. Case-based, with experience developing and teaching case scenarios for simulation labs preferred. Other workshop-oriented designs may be accommodated. A typical PBL room is set for 50-100 participants, with 7-8 each per round table. Please describe your interest and plan for teaching a PBL on your proposal form.

Professional Practice Gap	Learning Objective(s) that will close the gap and meet the need	Outcome Being Measured
• Interpretation of abnormal results can be challenging since results may be abnormal in patients with a not healthy liver. • Physicians have knowledge gaps with regard to evaluating abnormal liver function tests. • Physicians are often unsure of when to refer, based on abnormal laboratory results. • Physicians need to be updated on new ACG Guidelines for Evaluation of Abnormal Liver Chemistries	1. Review the ACG guidelines for evaluation of abnormal liver chemistries. 2. Use a stepwise diagnostic approach to evaluate patients with elevated liver transaminase levels if the history and physical examination do not suggest a cause. 3. Develop a collaborative care plan that involves observation with lifestyle modification is appropriate if the initial history, physical examination, and workup do not suggest a cause of elevated liver transaminase levels. 4. Coordinate referral and follow-up in patients with unexplained elevation of liver transaminase levels for six months or more.	Learners will submit written commitment to change statements on the session evaluation, indicating how they plan to implement presented practice recommendations.

ACGME Core Competencies Addressed (select all that apply)

X	Medical Knowledge		Patient Care
	Interpersonal and Communication Skills		Practice-Based Learning and Improvement
	Professionalism	X	Systems-Based Practice

Faculty Instructional Goals

Faculty play a vital role in assisting the AAFP to achieve its mission by providing high-quality, innovative education for physicians, residents and medical students that will encompass the art, science, evidence and socio-economics of family medicine and to support the pursuit of lifelong learning. By achieving the instructional goals provided, faculty will

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facilitate the application of new knowledge and skills gained by learners to practice, so that they may optimize care provided to their patients.

- Provide up to 3 evidence-based recommended practice changes that can be immediately implemented, at the conclusion of the session; including SORT taxonomy & reference citations
- Facilitate learner engagement during the session
- Address related practice barriers to foster optimal patient management
- Provide recommended journal resources and tools, during the session, from the American Family Physician (AFP), Family Practice Management (FPM), and Familydoctor.org patient resources; those listed in the References section below are a good place to start
    - Visit http://www.aafp.org/journals for additional resources
    - Visit http://familydoctor.org for patient education and resources
- Provide a review of the new American College of Gastroenterology (ACG) guidelines on the evaluation of abnormal liver chemistries, published in January 2017; including recommendations for application to the family medicine practice.
- Provide recommendations for a stepwise diagnostic approach to evaluate patients with elevated liver transaminase levels if the history and physical examination do not suggest a cause.
- Provide strategies and resources for developing a collaborative care plan that involves observation with lifestyle modification is appropriate if the initial history, physical examination, and workup do not suggest a cause of elevated liver transaminase levels.
- Provide recommendations for coordinating referral and follow-up in patients with unexplained elevation of liver transaminase levels for six months or more, including recommendations for when to refer.
- Provide recommendations regarding guidelines for Medicare reimbursement.
- Provide recommendations to maximize office efficiency and guideline adherence to the use of liver function tests.
- Provide an overview of newly available treatments, including efficacy, safety, contraindications, and cost/benefit relative to existing treatments.

Needs Assessment

Abnormal liver function test results are common in primary care, particularly among asymptomatic patients as liver biochemical and function tests are routinely included in blood test panels.[1,2] Interpretation of abnormal results can be challenging since results may be abnormal in patients with a health liver.[3,4] Knowledge of how to correctly analyze liver enzymes is essential in the diagnosis, monitoring and treatment of liver disease.[5]

Data from a current AAFP Needs Assessment Survey suggest that family physicians have knowledge gaps regarding liver function testing usage and interpretation.[6] More specifically, CME outcomes data from 2015 and 2016 American Academy of Family Physicians (AAFP) FMX: *Liver Function Test* sessions, suggest that physicians have knowledge and practice gaps with regard to selecting appropriate tests; interpreting test results; checking transaminases more often in patients on certain medications (e.g. lisinopril and losartan, as well as on trazodone and

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buproprion); providing effective patient education to address lifestyle changes; when to repeat tests; and when imaging is appropriate.[7,8]

Physicians are often challenged to properly interpret abnormalities in liver function tests, and to develop a plan for the interpretation of abnormal liver function tests, including knowing when to refer.[2,9]

Physicians may improve their care of patients with abnormal liver function test results by engaging in continuing medical education that provides practical integration of current evidence-based guidelines and recommendations into their standards of care, including, but not limited to the following:[2,9-11]

- A stepwise diagnostic approach should be initiated in patients with elevated liver transaminase levels if the history and physical examination do not suggest a cause.
- If the history and physical examination do not suggest a cause of elevated liver transaminase levels, testing should be repeated in two to four weeks.
- A fasting lipid profile and glucose level should be ordered if the metabolic syndrome or nonalcoholic fatty liver disease is suspected.
- Observation with lifestyle modification is appropriate if the initial history, physical examination, and workup do not suggest a cause of elevated liver transaminase levels.
- Referral to a gastroenterologist for potential liver biopsy is reasonable in patients with persistent unexplained elevation of liver transaminase levels for six months or more.
- Consider referral in patients with unexplained liver abnormalities more than 1.5 times normal on two occasions, a minimum of six months apart; unexplained liver disease with evidence of hepatic dysfunction (hypoalbuminaemia, hyperbilirubinaemia, prolonged prothrombin time, or international normalized ratio); known liver disease where treatment beyond the withdrawal of the implicating agent is required.
- Nonalcoholic fatty liver disease is the most common cause of asymptomatic elevated aminotransferase levels.
- Suspect alcoholic liver disease when the aminotransferases are elevated and the aspartate aminotransferase level is two to three times higher than the alanine aminotransferase level, especially when gamma-glutamyl transferase levels are elevated.
- If medications or alcohol is a suspected cause of elevated aminotransferase levels, remeasure the levels after 6 to 8 weeks of abstinence.
- Patients with nonalcoholic fatty liver disease should be evaluated for metabolic syndrome and insulin resistance.
- Ultrasonography is the first-line imaging technique for patients with suspected nonalcoholic fatty liver disease.
- Liver biopsy is the criterion standard for diagnosis and prognosis of nonalcoholic fatty liver disease.
- In patients with nonalcoholic fatty liver disease, a healthy diet, weight loss, and exercise should be recommended as first-line therapeutic measures to reduce insulin resistance.
- There is insufficient evidence to support bariatric surgery, bile acids, antioxidant supplements, metformin (Glucophage), or thiazolidinediones for the treatment of nonalcoholic fatty liver disease or nonalcoholic steatohepatitis.

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Faculty should also provide a review of the new American College of Gastroenterology (ACG) guidelines on the evaluation of abnormal liver chemistries, published in January 2017; including recommendations for application to the family medicine practice.[12]

Physicians can improve patient satisfaction with the referral process by using readily available strategies and tools such as, improving internal office communication, engaging patients in scheduling, facilitating the appointment, tracking referral results, analyzing data for improvement opportunities, and gathering patient feedback.[13,14]

These recommendations are provided only as assistance for physicians making clinical decisions regarding the care of their patients. As such, they cannot substitute for the individual judgment brought to each clinical situation by the patient's family physician. As with all clinical reference resources, they reflect the best understanding of the science of medicine at the time of publication, but they should be used with the clear understanding that continued research may result in new knowledge and recommendations. These recommendations are only one element in the complex process of improving the health of America. To be effective, the recommendations must be implemented. As such, physicians require continuing medical education to assist them with making decisions about specific clinical considerations.

Resources: Evidence-Based Practice Recommendations/Guidelines/Performance Measures

- American College of Gastroenterology (ACG) Guidelines on the Evaluation of Abnormal Liver Chemistries[12]
- Causes and evaluation of mildly elevated liver transaminase levels[2]
- AASLD Practice Guidelines[15]
- The diagnosis and management of non-alcoholic fatty liver disease: practice Guideline by the American Association for the Study of Liver Diseases, American College of Gastroenterology, and the American Gastroenterological Association[16]
- Adding health education specialists to your practice[17]
- Nonalcoholic Fatty Liver Disease: Diagnosis and Management[11]
- Envisioning new roles for medical assistants: strategies from patient-centered medical homes[18]
- The benefits of using care coordinators in primary care: a case study[19]
- Engaging Patients in Collaborative Care Plans[20]
- The Use of Symptom Diaries in Outpatient Care[21]
- Health Coaching: Teaching Patients to Fish[22]
- Medication adherence: we didn't ask and they didn't tell[23]
- Encouraging patients to change unhealthy behaviors with motivational interviewing[24]
- Integrating a behavioral health specialist into your practice[25]
- Simple tools to increase patient satisfaction with the referral process[13]

References

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