

Studienplan für den CAS-Studiengang in Hepatologie

17.05.2017

Der Studiengang in Hepatologie ist eine universitäre Weiterbildung, die zur Erteilung des „Certificate of Advanced Studies in Hepatology, Universität Bern (CAS Hepatology Unibe)“ führt. Rechtsgrundlage ist das Reglement der Medizinische-Fakultät für die Weiterbildungsstudiengänge In Hepatologie“ vom 17.05.2017.

1. Studiengangsziel

Ziel

Ziel ist es, die Komplexität der verschiedenen Aspekte der Hepatologie mit ihrem theoretischen Hintergrund und praktischen Beispielen zu vermitteln.

2. Umfang, Ziele und Inhalte der Studiengangselemente

Umfang

Der Studiengang umfasst 60 Kurstage (total ca. 390 Präsenzstunden) und mindestens 15 ECTS-Punkte (insgesamt mindestens 400 Arbeitsstunden).

Modul 1

General Hepatology

Umfang: 12 Tage (3 ECTS-Punkte)

The educational goal of this module is to develop skills in the management of the ambulatory patients with liver disease in a cost-effective and expedient manner. The fellow attending this module will deal with the most frequent liver diseases such as chronic viral hepatitis B or C, alcoholic liver disease, cholestatic liver diseases or autoimmune liver diseases. All these topics are crucial to the curriculum of the hepatologist. In this module the fellow will understand the indications, contraindications and principles common liver tests, including blood tests, ultrasound, elastography and liver biopsy.

The fellow will be asked to evaluate the patient information autonomously, will formulate a differential diagnosis and plan for further evaluation and treatment prior to the attending's evaluation of the patient. The fellow then presents the case to the faculty member assigned to the outpatient clinic, and they will complete the patients' visit together, outlining the final management plan. If important elements unknown at the time of the visit emerge later on, the fellow is responsible for communicating in writing and when necessary over

the phone the decisions to the other physicians involved in the case. The fellow writes the report of the visit, which will be corrected by the faculty member. It is responsibility of the fellow to provide the reports in a timely manner. The fellows will track all the cases they are involved in on a specific log; this will allow them to prove their experience in the field.

The fellow attends the Interdisciplinary weekly discussion of cases. Among them, a particular relevance to this module is held by the meeting in which all liver biopsies performed in the previous week are discussed with the liver pathologist, and in which CT and/or MRI findings of difficult cases are reviewed with an expert radiologist. This will expose the fellow to the importance of a multidisciplinary approach in the field of hepatology.

Modul 2

Drugs and Liver metabolism

Umfang: 12 Tage (3 ECTS-Punkte)

This module is composed of the following 4 learning goals:

1. Use of the common drugs used in hepatology. This covers drugs to treat chronic liver diseases such as HBV anti-virals (lamivudine, tenofovir, entecavir), HCV anti-virals (polymerase inhibitors, protease inhibitors, NS5a inhibitors), immunosuppressors (prednisone, azathioprine, mycophenolate, calcineurin-inhibitors, mTOR-inhibitors), bile acids (ursodeoxycholic acid, obeticholic acid). The fellow gets familiar with the indications, contraindications, drug-drug interactions, dosages and monitoring/controls.
2. Principles of drug liver metabolism. The fellow understands clinical pharmacology concepts such as the different hepatic phases of drug liver metabolism; the enzymatic polymorphisms relevant to drug metabolism and the drug which are affected; the effects of cirrhosis and ageing on hepatic drug metabolism as well as the hepatic first pass effect.
3. Drug induced liver injury (DILI). The fellow learns how to diagnose drug-induced liver injuries, the criteria to assess the likelihood of this diagnosis. The most common and important drug-induced liver injuries are specifically taught (antibiotics, anticoagulants, antiepileptics).
4. Metabolic liver diseases. The fellow will expand his/her knowledge on the management of non-alcoholic fatty liver disease and the common genetic metabolic liver diseases such as hereditary hemochromatosis, Wilson's disease, alpha-1 antitrypsin deficiency. Diseases occurring in pregnancy will be discussed. Furthermore, gallstones disease and its management will be covered.

Modul 3

Fibrosis, Cirrhosis and Vascular Liver Diseases

Umfang: 12 Tage (3 ECTS-Punkte)

In this module the fellow learns the conceptual basis and techniques relevant to the assessment of liver fibrosis and liver perfusion. This will include:

1. Pathophysiology of fibrosis and cirrhosis. This will include the molecular processes and the pathophysiological consequences of fibrosis and cirrhosis.
2. Vascular liver diseases. Insight on the most important and frequent scenarios will be given: portal vein thrombosis, thrombosis of the hepatic veins (Budd-Chiari syndrome), idiopathic portal hypertension. The fellow will face the complexity of these diseases, and will learn how to diagnose them. The following three sub-modules are needed to complement this clinical knowledge.
 - 2.1. Transient elastography. How to perform a liver and spleen stiffness measurement by transient elastography, and how to determine controlled attenuation parameter measurement by vibration-controlled transient elastography.
 - 2.2. Ultrasound. How to perform an ultrasound examination of the liver using B-mode, Doppler-US and contrast-enhanced ultrasound; portable point-of-care bedside ultrasonography. He/she will also learn how to measure liver and spleen stiffness by 2 dimensional real time shear wave elastography. All the examinations will be supervised by the staff member attending the ultrasound clinic, until the fellow is considered to have gained sufficient autonomy. The fellow will anyhow be able to ask the staff to supervise him/her in particularly complex cases.
 - 2.3. The fellow should achieve a complete independency in the performance of transient elastography and basic diagnostic B-mode and Doppler ultrasound for liver disease. He will assist the staff in the performance of contrast-enhanced ultrasound and will participate in the interpretation of the images. The fellow will write the ultrasound report on the same day of the examination; the report will then be corrected by the responsible staff member.
 - 2.4. Percutaneous liver biopsy. The fellow will learn how to perform a percutaneous liver biopsy. The attending on call will directly supervise the entire procedure of liver biopsy, for all fellows regardless of level of training. However, as the fellow's procedural proficiency increases, the level of independence in performing the procedure will increase accordingly.

Other topics covered in this module include: indications to diagnostic and interventional endoscopy, interventional radiology and laparoscopy; radiological and nuclear medicine examination of liver and biliary tree

This module is composed of 3 parts integrating and further expanding the knowledge and skills gained in the previous modules, and will focus on severe liver disease. The three parts and respective learning objectives are described below:

1. Management of hospitalized patients. The fellow develops skills in the management of hospitalized patient with liver disease in a cost-effective and expedient manner under the supervision of the attending liver specialist who is on-call. A significant component of the learning experience comes from working in close collaboration with the attending on call. The fellow serves as a junior consultant and contact for residents, interns, and medical students who require assistance for managing patients with liver diseases.

The fellow perform an initial evaluation and formulate a differential diagnosis and plan for further evaluation and treatment prior to the attending's evaluation of the patient. Together, the fellow and attending will arrange a time to meet in order for the attending to fully review the fellow's evaluation of the patient and to supervise all necessary procedures. The attending will then evaluate the patient with the fellow, assuring accuracy of the available data, appropriateness of the diagnostic and therapeutic plan and communication of the final decisions to the medical team taking care of the patient. The fellow together with the staff member on call will write a consult note in the chart if necessary.

Topics specific to this sub-module include: fulminant liver failure; acute-on-chronic liver failure; renal failure in cirrhosis; hepatic encephalopathy, nutrition in liver disease.

2. Hepatic hemodynamic procedures. The second educational goal of this module is to understand the indications, contraindications and principles of hepatic veins catheterisation for hepatic venous pressure gradient (HVPG) measurement and transjugular liver biopsy. These are often needed in the setting of hospitalized patients with acute or acute-on-chronic liver disease.
3. Paracentesis. The third educational goal of this module is then to learn how to perform a diagnostic and therapeutic paracentesis. The fellow reviews the indications with the attending on call and performs the paracentesis under supervision. Indications to albumin infusion and further therapeutic measures will be part of the learning content of this module.
The fellow attends the monthly interventions board meeting and the bi-monthly meeting on portal hypertension and presents his/her cases.

Modul 5

Liver Transplantation and Liver Cancer

Umfang: 12 Tage (3 ECTS-Punkte)

This module is composed of 2 goals.

1. Liver Transplantation. The fellow sees and manages with an attending patients on the waiting list for liver transplantation as well as patients who underwent liver transplantation. The fellow

gets familiar with the indications, and strategies to list and maintain patients on the waiting list. The fellow is involved in the care of pre- and post-transplantation phases. He also sees in the outpatient clinic patients who come for regular controls after transplantation. The fellow attends and participates actively at the weekly liver transplantation meeting.

2. Liver cancer. Primary liver cancers concern a specific segment of patients with liver diseases. The diagnosis and staging of malignant liver tumors such as hepatocellular carcinoma and cholangiocarcinoma is taught. He/she will see how a percutaneous ultrasound-guided fine needle aspiration/biopsy of focal liver lesions is performed. The fellow sees patients with these diagnoses under the supervision of an attending. He/she learns how to follow up these patients. The fellow attends the weekly tumor board meeting and presents his/her cases.

3. Leistungsnachweise im Studiengang

Leistungsnachweise

Am Ende jeden Moduls wird eine mündliche oder schriftliche Leistungskontrolle durchgeführt.

Die regelmässigen Präsenzveranstaltungen ("Educational Activities") müssen insgesamt mit einer Präsenzzeit von mindestens 90 % absolviert worden sein. Darüber hinausgehende Absenzen müssen in Absprache mit der Studienleitung auf eigene Kosten kompensiert werden.

Für die Umsetzung der Lehrinhalte in das Praxisumfeld besteht die Möglichkeit, eine Projektarbeit im Umfang von 1.5 ECTS-Punkten zu verfassen. Die Projektarbeit ist kein obligatorischer Bestandteil des CAS-Studiengangs. Der Betreuungsaufwand für die Projektarbeit wird den Teilnehmenden in Form einer Pauschale in Rechnung gestellt. Die Programmleitung legt deren Höhe fest.

Die Programmleitung entscheidet aufgrund der Bewertung des Leistungsnachweises und der Erfüllung der weiteren Leistungsanforderungen über das Bestehen und die Erteilung des Zertifikats.

Das Nähere regeln die Richtlinien der Programmleitung zur Leistungskontrolle.

4. Schlussbestimmungen

Inkrafttreten

Dieser Studienplan tritt auf den 01.09.2017 in Kraft.

Von der Programmleitung beschlossen:

Der Vorsitzende:



Prof. Dr. Jean-François Dufour

17.05.2017

Von der Medizinischen Fakultät genehmigt:

Der Dekan:



Prof. Dr. Hans-Uwe Simon