PDCC Hepatopathology-Curriculum

Guidelines for competency based Postdoctoral Certificate Course in Hepatopathology, Department of Pathology, SGPGIMS

Program Duration: One-year post-M. D Postdoctoral certificate course (Hepatopathology)

Program Objective

The one-year post-degree certificate course training would allow the qualified resident doctor to have acquired comprehensive training in various aspects of the specialty of Hepatobiliary and Liver Transplant Pathology. The structured training program would have the following objectives:

1. To impart specialty training in medical and surgical pathology of hepatobiliary and liver transplant pathology.
2. To contribute towards the growth of specialty including diagnostics, teaching and research.

Program training schedule

1. Specialty pathology: 9 months
2. Other laboratories in the Pathology department and other departments of the institute related to the course: 3 months

Number of students/years: 1 (One)

Program Outcome

Outcome of the structured PDCC Hepatpathology.

Pathology program is to enable the student to acquire the following skills after the successful completion of a one-year training program.

1. Be able to evaluate and diagnose various medical conditions and diseases of the native and transplant hepatobiliary system, both biopsies and surgical specimens.
2. To be able to understand the basic pathophysiologic mechanisms of the disease with respect to the demographic profile of the patient.

Lt Col Varun Bajpai VSM
Executive Registrar
SGPGIMS,Lucknow

3. Be able to interpret serological, biochemical, and immunologic findings in correlation with clinical presentation of a liver disease.
4. To be able to do a complete diagnostic evaluation of a liver biopsy including techniques and interpretation of histopathology, immunohistochemistry, and electron microscopy (when and where indicated).
5. To understand basic and transplant immunology and the pre-transplant donor and recipient work up.
6. To understand the technique of liver biopsy, liver transplantation, and intervention radiology procedures.
7. To study the various mechanisms of graft dysfunction, its classification clinical presentation, complications, work up and diagnostic evaluation.
8. To identify the research priorities at regional/ national and international levels.
9. To understand the indications of molecular testing and interpretation.
10. To contribute towards the growth of specialty including diagnostics, teaching and research.

Theoretical Skills:

1. Basic anatomy, physiology, embryology, biochemistry, and the basic mechanism of diseases.
1. Pathogenesis, diagnostic approach, and workup of inflammatory, benign, and neoplastic diseases of hepatobiliary tissue including the recent advances.
2. WHO Classification of diseases & AJCC/TNM classification of cancers
3. Developmental abnormalities and liver diseases in childhood
4. Genetic and Metabolic liver diseases
5. Disorder of iron overload
6. Fatty liver diseases: Alcoholic and Non-alcoholic
7. Acute and chronic viral hepatitis
8. Other viral diseases, infectious diseases and HIV-related liver diseases
9. Vascular disorders
10. Hepatic injury due to drugs, herbal compounds, chemicals and toxins
11. Autoimmune Hepatitis
12. Diseases of bile ducts
13. Tumors and tumor-like lesions of the liver

Lt Col Varun Bajpai VSM
Executive Registrar
SGPGIMS,Lucknow

Needs: Local : Pink, National : Orange, Regional: light blue, International : green

Colour Coding
Global GREEN
Regional BLUE
National ORANGE
Local (State) PINK

14. Systemic diseases
15. Diseases of gall bladder and extrahepatic biliary tract (Developmental disorders, Infectious and Inflammatory disorders, Benign and malignant tumors, and molecular genetics of tumors)
16. Liver transplant pathology

Laboratory Skills

1. Histopathology Lab: Types of fixatives, tissue processing technique and reagents used, grossing protocols, routine stains and special histochemical stains, frozen sectioning
2. Cytopathology Lab: Performing Fine Needle aspiration (FNA), including image-guided, processing all types of cytology specimens.
3. IHC lab and Electron microscopy lab: Principles, basics, methods and quality assurance
4. Molecular Lab: Basic principles of molecular techniques and applications.
5. Immunology Lab: serological workup (ANA, ANCA, ASMA, LKM, AMA, TTG α1AT, IgA, IgG, S.Ceruloplasmin)
6. Gastroenterology Lab: Viral antibodies, HBV DNA & HCV RNA quantitative estimation, Liver biopsy procedures, Endoscopic biopsy techniques.
7. Initiate research questions and systematically write or present a paper and publish in a journal.

Courses offered in the program.

Course I: *Basic Sciences of hepatobiliary pathology and liver transplant pathology including clinical pathology, clinical chemistry, applied genetics, radiology and immunology*

Course II: *Applied and recent advances in hepatobiliary disorders including liver pathology and transplant pathology.*

Course I: Basic Sciences of hepatobiliary pathology and liver transplant pathology including clinical pathology, clinical chemistry, applied genetics, radiology and immunology.

Lt Col Varun Bajpai VSM
Executive Registrar
SGPGIMS,Lucknow

Colour Coding

Global	**GREEN**
Regional	**BLUE**
National	**ORANGE**
Local (State)	**PINK**

Course Objective

Student shall have in-depth understanding of the anatomy, physiology, cellular mechanism and pathogenesis involved in the various diseases of the hepatobiliary system and role of other diagnostic modalities in assessment of the disease for the benefit of the patient.

Course Outcome

The student shall have acquired the following skills and knowledge at the end of the course.

1. The student will have the knowledge of the liver disease at regional, national and international level.
2. Shall have knowledge of etiology and pathogenesis of the various medical hepatobiliary diseases and transplant rejections.
3. The student will gain pathological skills necessary for approaching liver native and graft biopsies and resection specimens.
4. Identify the key principles in the liver biopsy processing for light microscopy and special stains and review the different histopathologic techniques and their purpose.
5. Recognize different patterns of hepatic injury in the biopsy specimens in reference to clinical presentations and their impact on treatment.
6. Shall be well-versed with the standard guidelines and recommendations for the diagnosis of the disease.
7. Shall have understanding and knowledge to interpret the basic serological tests, results of radiological investigations, genotyping and sequencing required for diagnosis of the hepatobiliary diseases.
8. To utilize the information and help in guiding the clinician for better patient management.
9. To understand the serological tests and Transplant Immunology.
10. To understand the indications, procedure, and interpretation of various immunohistochemical markers required for evaluation of hepatobiliary diseases.

Course II: Applied and recent advances in hepatobiliary disorders including liver transplant pathology.

Course Objective

Lt Col Varun Bajpai VSM
Executive Registrar
SGPGIMS,Lucknow

Students shall be well versed with the new knowledge, controversies, new interventions, diagnostic modalities and changing trends in scoring and assessment of the hepatobiliary diseases including transplant pathology.

Course Outcome

The student shall have acquired the following skills and knowledge at the end of the course.

1. In-depth knowledge of the recent advances and cutting-edge issues in the diagnosis of hepatobiliary diseases and liver transplant pathology.
2. Shall be updated with the changing, terminology for disease and condition.
3. Shall be well-versed with the standard guidelines and recommendations for the diagnosis of the disease.
4. Shall be aware of the upcoming new information in diagnosis and management of the diseases as this field keeps changing with time.
5. Be able to help in the evaluation of the patient for liver transplantation.
6. Have a knowledge and understanding of the effects of immunosuppressive medication, opportunistic infections, toxicities used in liver transplant recipients.
7. Have the skill to diagnose early and late post-transplant rejections.
8. To understand the technique of liver biopsies, liver transplantation, and interventions in vascular diseases.
9. To understand the indications of molecular testing and interpretation.

Method for computing Program outcome

The summative assessment examination shall be held at the end of 12 months of training and include.

A. Theory Examination

B. Practical examination and Viva-voce

Theory examination and Practical, Viva-voce shall be separate heads of passing. Passing shall be separate for each head.

A. Theory Examination

Lt Col Varun Bajpai VSM
Executive Registrar
SGPGIMS,Lucknow

Needs: Local : Pink, National : Orange, Regional: light blue, International : green

There shall be two theory papers, each representing the two courses offered in the program, each of three hours duration. Each paper will have 8 to ten short notes. The papers will cover the following areas:

Paper-I: Basic aspects of the hepatobiliary pathology: Shall consist of clinical pathology, clinical chemistry, applied radiology and immunology as relevant to the hepatobiliary pathology and Liver transplantation.

Paper-II: Applied and Recent advances in Hepatobiliary Pathology: Pathology and recent advances in Hepatobiliary disorders including surgical pathology and transplant pathology.

Pass percentage shall be cumulatively 50% with minimum 40% marks in each theory paper.

Theory Paper (2)	**Maximum Marks**	**Minimum Marks Required**
Paper-I: Basic aspects of the hepatobiliary pathology	100	40 (40%)
Paper-II: Applied and Recent advances in Hepatobiliary Pathology	100	40 (40%)
Total Marks	**200**	**100 (50%)**

B. Practical Examination

The practical examination shall carry 150 marks and shall consist of the following:

1. Clinical case discussion and clinic-pathological exercises of the case.
2. Reporting and discussion on specialty pathology slides (including the postmortem biopsies/partial autopsy)
3. Section cutting, staining, gross examination and serological examination.
4. Basic clinical chemistry and hematology specimen workup.
5. Spotters/OSPE including classical clinical case scenario, radiology, instruments, etc.

Lt Col Varun Bajpai VSM
Executive Registrar
SGPGIMS,Lucknow

6. Viva-voce.
7. Logbook evaluation

Final Viva-voce

Final viva-voce shall carry 50 marks and shall cove all broad aspects of hepatobiliary pathology with reference to applied and recent advances in the field and areas as considered appropriate by the board of examiners. Logbook evaluation and discussion on the dissertation submitted by the candidate will also be taken.

Computation of Result

Each candidate shall be evaluated in theory, practical and viva-voce and those securing a minimum of 50% marks in theory (Both two papers combined: 100/200) and obtaining at least 50% marks in practical & viva-voce together (100/200) shall be declared successful. Candidates securing at least 75% marks in total shall be declared to have passed PDCC with honours.

Final computation of the Practical result will be done as follows.

S No.	Practical Examination	Maximum Marks	Minimum Marks Required
1	Clinical Competence	150	60 (40%)
2	Practical Skills	100	40 (40%)
3	Viva-Voce	50	20 (40%)
Total Marks		**300**	**150 (50%)**

Apart from the above-mentioned formal examination, each student will also be evaluated on a day-to-day basis on the following activities.

1. Periodic assessment of the performance of the student in each laboratory posting as well as mid-term theory and practical examination
2. Each candidate shall be required to submit a dissertation on any topic related to the specialty pathology not exceeding 100 pages and to be submitted at least two months before final examination.
3. Interdepartmental discussions as and when required for the diagnosis of the patient.
4. Level of confidence while assessing the biopsy of the patient.
5. Willingness to learn new skills and acquire new knowledge.

Lt Col Varun Bajpai VSM
Executive Registrar
SGPGIMS,Lucknow

6. Self-motivated reading and learning
7. Punctuality in their work
8. Skill and willingness to teach others.
9. Involvement in research and maintenance of departmental data
10. Interpersonal relationship and extracurricular activities

Method for computing Course outcome

Course I: ***Basic Sciences of hepatobiliary pathology and liver transplant pathology including clinical pathology, clinical chemistry, molecular biology, applied genetics, radiology, and immunology.***

Assessment of the student will be done on his/ her performance in the following academic activities.

1. Seminar presentation
2. Short topic/ Tutorial presentation
3. Journal club
4. Group discussion during teaching hours and interdepartmental conference
5. Didactic lectures
6. Invited faculty lecturers to elaborate specific topics.

Course II: ***Applied and recent advances in hepatobiliary diseases including surgical pathology and transplant pathology.***

Assessment of the student will be done on his/ her performance in the following academic activities.

1. Seminar presentation
2. Short topic/ Tutorial presentation
3. Journal club
4. Group discussion during teaching hours and interdepartmental conference
5. Didactic lectures
6. Invited faculty lectures to elaborate specific topics.

Textbooks

- Mac Sween's Pathology of the Liver

Lt Col Varun Bajpai VSM
Executive Registrar
SGPGIMS,Lucknow

- Diagnostic Cytopathology.
- Cancer.
- Histopathology.
- Indian journal of Pathology and Microbiology.
- Transplantation
- Transplant International

Lt Col Varun Bajpai VSM
Executive Registrar
SGPGIMS,Lucknow