KING GEORGE'S MEDICAL UNIVERSITY

Uttar Pradesh, Lucknow- 226003, India

DEPARTMENT OF PATHOLOGY

Ph.: 0522-2257580

Ref: ...1419...

Date: 24/12/2020

OFFICE OF THE DEAN
Ref: No. 7284
Dt: 24/12/20
K.G. Medical University, U.P. Lucknow

Through Proper channel

24/12/2020

To,
Academic Council,
Dean, Faculty of Medicine,
KGMU, Lucknow

Subject:- Request to permit PDCC (Hematopathology), Department of Pathology, KGMU.

Dear Sir,

This is to bring to your kind notice that Department of Pathology is catering to more than 50,000 patients with neoplastic and non- neoplastic hematplogical disorders annually.

We are equipped adequately to start PDCC in Hematopathology as per guidelines in our department. Kindly accord your approval for the same. We request for 2 students to be enrolled under this course per year for one year course. These students will be serving as Senior Resident in University and provide their services as per university rules. Additionally they will learn Clinical Hematology/ Laboratory Medicine as per the curriculum attached.

The above has been approved by the departmental academic council held on 15/12/2020. Necessary documentation is being attached with this letter for your king perusal and action.

Thanking you.

Yours Sincerely

USSingh

Dr.U.S.Singh,
Professor and Head,
Department of Pathology, KGMU.

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Any other Agenda

Meeting of Board of Faculty of Medicine, KGMU, Lucknow.

Venue:- Brown Hall, Administrative Block

Date:- 30th December 2020 at 01:00PM

1. To discuss and approve recommendation of the Board of Studies of the department of Pathology proposed vide letter no. 1419 dated 24/12/2020.
   a) To start PDCC in Hematopathology

   (Annexure-1) – Page No:- 02 - 24
2. To discuss and approve recommendation of the Board of Studies of the department of Pathology proposed vide letter no. 1418 dated 24/12/2020.
   a) To start PDCC in Laboratory Medicine

   (Annexure-2) – Page No:- 25 - 45
3. To discuss and approve recommendation of the Board of Studies of the department of Anesthesiology proposed vide letter no. Anaes/1211/2020 dated 24/12/2020.
   a) To start two years fellowship- PDAF (Post Doctoral Advance Fellowship) course in pain & Palliative Medicine

   (Annexure-3) – Page No:- 46 - 52
4. To discuss and approve recommendation of the Board of Studies of the department of Sports Medicine proposed vide letter no. spmd/20/120 dated 19/03/2020.
   a) To start Fellowship in Sports Medicine

   (Annexure-4) – Page No:- 53 - 67

29/12/20

Dean
Faculty of Medicine
K.G. Medical University, U.P.
Lucknow

Attachments:

1. Course Details

Name of Course	Post Doctoral Certificate Course (PDCC) in Hematopathology
Course Director	Prof. U.S.Singh, Professor and Head, Department of Pathology, KGMU, Lucknow
Faculty In-Charge	Prof. Rashmi Kushwaha
Co Faculty In-Charge	
Department of Pathology	Prof Suresh Babu Prof. Ajay Kr. Singh Dr. Wahid Ali Dr. Mili Jain Dr. Geeta Yadav Dr. Sanjay Mishra
Department of Clinical Hematology	Prof. A.K. Tripathi Dr Shailendra Prasad Verma
Department of Paediatrics	Dr Nishant Verma
Department of Transfusion Medicine	Prof. Tulika Chandra
Department of Medicine	Prof. K.K. Sawlani
Department of Surgical Oncology	Prof Vijay Kumar

Name of the Course: 'Post Doctoral Certificate Course (PDCC) in. Hematopathology

Introduction:

King George's Medical University and Gandhi Memorial and Associated Hospitals (GM&AH) is a tertiary care 4500 bedded hospital providing service to not only patients from Uttar Pradesh but also from other states and neighboring countries. In the recent years, the concept of specialization/ sub-specialization has emerged in almost all disciplines of medicine throughout the world.

Currently, hematological disorders like leukemia, lymphoma, bleeding disorders and ahemia are on rise in our country and there are very few centers which provide complete training in this field. Correct diagnosis with identification of both prognostic and predictive factors by the reporting pathologist not only provides diagnosis but also guides the treatment of the patients.

So far, only few separate training programs on Hematopathology exists in India. So there is the need for a well planned structured course in Hematopathology. Accordingly the details of curriculum are being formulated to be placed before the Board of Studies.

Aim:

The aim of the course is to provide complete training to medical professionals so that they can supervise and manage a complete setup of hematopathology lab.

Objectives:

1. To provide training to pathologists who can diagnose and stratify the patients with malignant and non malignant hematological disorders
2. To develop laboratory skills to carry out and report on different laboratory investigations in patients with hematological disorders.
3. Test Selection & Interpretation of results in context of a clinical condition along with concerned clinical specialty.

4. To promote the importance of excellence in teaching and research in Hematopathology.
5. To provide thorough knowledge about the epidemiology, screening and mass awareness for hematological disorders.

OBJECTIVE DETAILS

A. BROAD OBJECTIVES TO BE ACHIEVED AT THE END OF THE COURSE

Cognitive Domain

1. Diagnosis of routine and complex clinical hematological problems on the basis of Laboratory investigations.
2. Interpret laboratory data in relation to clinical findings with reasonable accuracy
3. Advice on the nature of appropriate specimens and the tests necessary to arrive at a diagnosis in a difficult or problematic case.
4. To be able to identify non-correlation and the causes of death due to diseases.
5. Should be able to teach Hematology to undergraduates, postgraduates, nurses and paramedical staff including laboratory personnel.
6. To carry out research on Hematopathology related topics.
7. Maintain accurate records of tests results for reasonable periods of time so that these may be retrieved as and when necessary.
8. Make and record observations systematically that is of use for archival purpose and for furthering the knowledge of Hematopathology.
9. Able to systematically write a paper and publish in a relevant journal.
10. Able to present a paper in a conference through an oral presentation and poster presentation.

11. Should be able to identify problems within and outside the laboratory pertaining to reliable test result and offer solutions thereof so that a high order of quality control is maintained.
12. Should be capable of effectively disposing laboratory waste to ensure minimization of risk to infection and accidents to laboratory personnel.
13. Able to supervise and work with subordinates and colleagues in a laboratory.
14. Subject himself/herself to continuing education and constantly update his/her knowledge of recent advances in Hematopathology and allied subjects.

Psychomotor Domain

1. Able to perform most of the routine tests in a Laboratory including sampling of specimens, processing, and instrumentation.
2. Able to collect specimen by routinely performed non-invasive out-patient procedures such as venepuncture, finger-prick, and bone-marrow aspiration. It is implied that the complications of these procedures and handling of complications are apparent. Further, whenever necessary must be able to provide appropriate help to colleagues performing an invasive procedure.
3. Should be familiar with the operation, function and routine maintenance of equipment.

Affective Domain

1. Should be able to function as a part of a team that is essential for the diagnosis and management of a patient. He/she should therefore develop an attitude of cooperation with his/her colleagues so necessary for this purpose. It is implied that he/she will, whenever necessary, interact with the patient and the clinician or other colleagues to provide the best possible diagnosis or opinion.
2. Always adopt ethical principles and maintain proper etiquette in his/her dealings with patients, relatives and other health personnel.
3. Respect the rights of the patient including the right to information and second opinion.
4. Should seek and give second opinion only where necessary and is requested for.

5. Provide leadership and inspire members of the team with whom he/she is involved with in the fields of diagnostic, teaching and research.
6. Develop communication skills not only to word reports and professional opinions but also to interact with patients, relatives, peers and paramedical staff.

B. SPECIFIC LEARNING OBJECTIVES

At the end of the training in PDCC (Hematopathology), the candidate will be able to:

1. Discuss the etiology and the pathophysiological basis of diseases in children and adults.
2. Explain the salient aspect of epidemiology, clinical presentation and prognosis of these disorders
3. Discuss rationality of the treatment and diagnosis of the above disorders
4. Make rational and relevant selection of tests (biochemical, hematological, microbiological etc.)
5. Perform the specified important tests belonging to physiology, biochemistry, microbiology, pathology, hematology, & immunology disciplines with a high order of mastery.
6. Plan and manage a large multidisciplinary laboratory services
7. Supervise and train technical staff of the laboratory
8. Modify/develop and establish newer techniques belonging to all subspecialties of laboratory medicine.
9. Simultaneous exercise on quality assessment and quality assurance in all laboratory services.
10. Explain the underlying principle and design of important laboratory instruments, their use as well as maintenance of the same.
11. Take safety measures in performing tests.
12. Assess cost-effectiveness of laboratory tests including budgeting and auditing.
13. Design and implement research plans in the field of laboratory medicine

Need for the course:

With the advent of molecular diagnostics, further revisions of classifications and newer modalities and drugs in cancer control and treatment correct diagnosis, classification and identification of important parameters are becoming more essentials. The situation is becoming worse day by day with misdiagnosis provided which leads to incorrect treatment and spreading of the malignancy.

Advances in classification and molecular genetics have occurred during the last decade. But the knowledge needs to be translated into action; there must be centers to train desired manpower for appropriate diagnosis and classification. The persons trained in the field should know the details of the prevalent hematological disorders, their pathogenesis, molecular mechanisms and community awareness initiatives as well as about screening modules and models available to carry on further research. All the major countries of the World have centers for hematopathology as separate entity where hematopathologists are the part of the team which manage the patients with benign and malignant hematological disorders. Hematological malignancies being a major killer in the developing world including India, there is a need to create experts in the field.

The proposed course of PDCC Hematopathology of one year post MD training will be targeted for the senior residents young faculty members/state medical doctors and will train them in diagnosis and reporting samples. The super specialty nature of our University will suit to start the above course in order to meet the challenges of Hematopathology. Having the basic knowledge of Pathology, the trainees will be able to tackle the problems of cancer diagnostics including the precise reporting and molecular diagnostics in a precise way.

Infrastructure available:

The Combined Department of Pathology and Bacteriology was started in 1913 under the chairmanship of Lt. Col. H. J. Walton. The course of MD (Pathology) was started in 1918. Lt. Col. H Stott made special contributions in assembling the museum, which is one of the best in the country. In 1960 the department was upgraded by the central government to provide enhanced facilities for postgraduate training and research.

During the 1970's remarkable developments took place leading to the creation of various subspecialty laboratories housed in the newly-expanded building.

Since the inception, the department is catering clinical and pathological diagnostic services. The department is also involved in research as per needs of the University, society and the country. All modern diagnostic facilities on Hematopathology are available. All the disciplines/ sub specialties of pathology are fully functional to meet the training program of PDCC (Hematopathology). The disciplines like Clinical Hematology, Obstetrics/Gynaecology, Paediatrics, General medicine, Surgical oncology, Surgery, Orthopaedics, , ENT, Endocrine surgery, Urology, oral surgery and other super specialties already exist to meet the requirement for the training. The dept. of Pathology has been running M.D. (Pathology) and PhD programmes since 1960.

Proposed Course:

1. **Name:** Post Doctoral Certificate Course (PDCC) in Hematopathology.
2. **Duration:** One year.
1. **Number:** Two students per year
1. **Eligibility:** The course is open for candidates holding the following degrees- MD (pathology) from a MCI recognized Institution. Age limit 35 years. Relaxation as per University norms.
2. **Mode of Selection:** Through all India open entrance test/sponsored candidates. Reservation as per University norms.
3. **Selection process:** Selection process will start through an all India advertisement. The entrance examination will be held in Nov/Dec for course starting in Jan of the next year. The examination will have written test. The written examination will be based on multiple-choice questions drawn from Pathology to Medicine in relation to hematopathology. Candidates will be offered seat based on merit. This will follow the University's rules applicable to other PDCC courses.
4. **Posting:** 12 months in Department of Pathology including rotational postings to Lymphoma and Leukemia (LL) Laboratory, Coagulation lab, Hematology Lab, Clinical chemistry, Molecular, Cytogenetics and Immunohistochemistry Laboratory, Clinical Hematology Department, Paediatrics Department.

12-month rotational posting as under

1. 2 month – lymphoma/leukemia Lab inoluding Flowcytometry lab
2. 2 month – Hematology lab including HPLC lab
3. 2 month – Coagulation Lab
4. 1months – Clinical Chemistry / Clinical Biochemistry / Chemical Pathology
5. 1 months – Department of Clinical Hematology including Hemophilia clinic
6. 1 months – Department of Paediatrics including Thalassemia Clinic
7. 15 days – Department of Medicine
8. 15 days – Department of Surgical Oncology
9. 15 days – Department of Transfusion Medicine
10. 30 days – Molecular Lab
11. 15 days – Final Assessment

8. **Course Faculty**: Faculty of Pathology, Clinical Hematology, Paediatrics, Transfusion Medicine, General medicine, Radiotherapy, Radiodiagnosis and Surgical Oncology disciplines.

1. **Requirements**: Two additional faculties for the course (one each in Clinical Hematology and Paediatrics) in addition to existing faculty of Pathology.

1. **Tuition fees**: As per academic Board decision.

2. **Academic & Teaching Activities:** Each candidate is expected to participate in journal clubs, seminars, group discussion, case discussion, Interdepartmental Clinio-pathological meets, morbidity-mortality meeting and combined grand round (CGR). In addition, candidate will have to complete two internal assessment of the University before the examination.

3. **Evaluation:** The candidates are expected to maintain a logbook of 100 cases reports of the patients diagnosed and treated for malignancies in the KGMU. In addition, each candidate will undergo laboratory assessment periodically *(after each semester)* by the faculty of the department following University

procedure in this regard. The result of the internal assessment will be made available to the examiners at the time of examination. At the end of 12 calendar months there will be a certifying examination according to rules laid down by ICP.

Final Examination –under ICP

Theory: 3 papers of 100 mark each.

Paper I : Basic & applied Haematology

Paper II : Paper on clinical Haematopathology

Paper III : Advances in clinical Haematopathology

Practical & laboratory examination:

a. Clinical

Two short cases (50 Marks)

Case exercises (25 Marks)

Spots- Procedures (25 Marks)

b. Laboratory

Morphology (100 Marks)

Long exercise (50 Marks)

Short exercise (25 Marks)

Spots-Data analysis (25 Marks)

Viva Voce (100 Marks)

Evaluation will be done by 2 examiners

1. 1 Internal Examiner
2. 1 External Examiner

1 Theory – 300 marks

Practical and VIVA – 400 marks

Total - 700 marks

In order to qualify, the candidate must score 50% in the theory and practical separately.

13. Examiners: University rules will be followed in this regard. In brief, there will be one external examiner and 1 internal examiner.

Course Content:

1. **Core Unit**

The course consists of 3 semesters of 4 months each. All semesters have intensive course of lectures, clinical and practical demonstration.

Semester 1

Basic Knowledge: Of Hematopathology with the principles of malignant and non-malignant hematological diseases along with knowledge of prognostic and predictive variables. This will consist of basic reading of hematopathology and its application in morphological diagnosis. Designing and interpretation of required Flowcytometry and Immunohistochemical panel. Interpretation of serological variables related to cancers. This will provide the knowledge to interpret the basic laboratory/ histological/ immunohistochemical data. The details in annexure -I.

Semester 2

Clincal exposure: Along with ongoing pathology department learning the resident will be exposed to Clinical Hematology, Paediatrics, Transfusion medicine principles. Here they would learn co-relations, clinical diagnosis and management and understand the importance of patient outcome. It is an intensive course consisting of lecture and practical demonstration of diagnosis and prognostic variables and many related fields. This topic includes: audit, designing and review of ancillary techniques applied, aspects of management, relevant epidemiological skills, prevention, application of molecular typing, treatment prescribing, an introduction to medicine/surgical/ radiotherapy management, legal and socio-economic aspects of cancers, the interface between the community and the hospital. (Annexure –II).

Semester 3

Cytogenetic and Molecular training: To gain experience and acquire knowledge about molecular diagnosis and its application. The resident

will apply the tests and learn their interpretation (annexure III). Recent advances in all the disciplines

List of Books in Departmental Library

Atlas of Peripheral Blood (The Primary Diagnostic Tool)	Irma Pereira Tracy.J.George Daniel.A.Arber
Atlas of Hematology	Saxena
Atlas and Text of Hematology	Dr.Tejinder Singh
Anemias and Other Red Cell Disorders	Kenneth.R.Bridges Howard.A.Peterson
Advances in Maligant Hematology	Hussain.L.Saba Ghulam.J.Mufti
Blood & Bone Marrow Pathology	Anna Porwitt Jefery Mccullough Wendey .N.Ferber
Blood & Bone Marrow Pathology	Anna Porwitt Jefery Mccullough Wendey .N.Ferber
Blood Cells (A Practical Guide)	Barbara.J.Bain
Blood Cells (A Practical Guide)	Barbara.J.Bain
Blood Disorders in the Elderly	Lodovico Balducci William Erashler
Bone Marrow Pathology	Barbara.J.Bain
Colour Atlas Of Hematological Cytology	..
Colour Atlas Of Clinical Hematology	A.v.Hoffbrand
Diagnostic Pathology Blood & Bone Marrow	Foucar
Essential Hematology	A.v.Hoffbrand P.A.H.Moss
Extranodal Lymphoma	Judith.A.Ferry
Flow Cytometry of Hematological Malignancies	Teteh Sun
Flow Cytometry and IHC Molecular Genetics for Hematological Neoplasm	Claudio Ortolani

Handbook Of Blood Banking	Dr.Tulika Chandra
Handbook Of Blood Banking	Dr.Tulika Chandra
Hematopathology (A vol.in the series Foundation in Diagnostic Pathology)	Eric.D.Hsi John.R.Goldblum
Hematopathology (A vol.in the series Foundation in Diagnostic Pathology)	Eric.D.Hsi John.R.Goldblum
Hematology (Basic Principles and Clinical Practice)	Victor.J.Marder William.C.Airid,
Hematology: (Clinical Principles and Application vol-1)	Bernadette.F.Rodak
Hematology: (Clinical Principles and Application vol-2)	Bernadette.F.Rodak
Hematology in Clinical Practice	Robert.s.Hillman Kenneth A.Ault.
Hematopathology	Elaine .S.Jaffe
Hematostasis and Thrombosis (Basic Principles and Clinical Practice)	Marder
Lecture Notes On Hematology	Hughes Jones
Lymph Nodes	Lawerence.H.Weiss
Lymphoma (Pathology ,Diagnostic and Treatment)	Robert Marcus
Microscopic Hematology (A Practical Guide For the Labortary)	Gillian Rozen
Modern Blood Banking & Transfusion Practices	Denise .M.Harmeing
Molecular Hematology	Drew Provan,john.G.Gribben
Neoplastic Hematology	Knowlls
NeoNatal Hematology (Pathogenesis, Diagnosis and Treatment)	Pedro.A.Dealarcon Eric.J.werner
Non Neoplastic Hematology and Infections	Hernani.D.Cauling
Pediatric Hematology	Robert.J.Arceci

	Iah.M.
Practical Hemostasis &Thrombosis	Nigel Key,Michael Makris
The ABC of CBC. Interpretation of Complete Blood Count & Histograms	D.P.Lokwani
The Obsetetric Hematology Mannual	Sue Pavord
Textbook of Hemophilia	Christine A.Lee
Wintrobes Clinical Hematology	john.P.Greer Daniel.A.Arber
Williams Hematology	Kennath Kaushansky
WHO Classification of Tumors of Haematopoietic and lymphoid	Steven.H.Swerdcow Etlas Campo
Atlas & Text of Hematology	Dr.Tejinder Singh
(Dacie & Lewis) Practical Haematology	S.M.Lewis
Henry's Clinical Diagnosis and management by labortory Methods	Richard A.Mcpherson

Syllabus

Introduction to clinical haematology

Introduction to Laboratory haematology

Basic morphology and basic concepts of haematopoiesis

Bone marrow structure and examination

Red blood cells: Structure and function

Laboratory approach to the diagnosis of anaemia

Development of Immune system

Overview of normal haemostatic mechanism

Laboratory approach to the diagnosis of bleeding disorders

Clinical evaluation and management of inherited bleeding disorders

Laboratory approach to the diagnosis of leukaemia

Laboratory methods in haematology

Principles of Nuclear Medicine: and applications in haematology & oncology

Biostatistics

Iron metabolism and iron deficiency anaemia

Megaloblastic anaemia

Red cell membrane defect: hereditary spherocytosis

Red cell enzymopathies

Thalassemia: (a) Clinical aspects and community screening (b) molecular ge

Sickle cell anaemia

~~Abnormal haemoglobins~~

Immune haemolytic anomies

Cell Cycle and Carcinogenesis

Principles of chemotherapy

A quantitative defect of neutrophils

Reactive lymphocytosis

Introduction to acute leukaemia

Immunophenotype of acute leukaemia

Cytogenetic of acute leukaemia

Acute lymphoblastic leukaemia in children

Acute lymphoblastic leukaemia in adults

Acute myeloid leukaemia

Acute promyelocytic leukaemia

Minimal residual disease in acute leukaemia

MDR genes in Leukaemia

Chronic myeloid leukaemia

Chronic lymphocytic leukaemia

Hairy cell leukaemia

T cell lymph proliferative disorders

Bone marrow transplantation

Disorders of spleen

Laboratory diagnosis of platelet function defects

Overview of megakaryopoiesis

Quantitative platelet disorders

Qualitative platelet disorders

ITP

TTP/HUS

Haemophilia

Von Will Brand's disease

Dysfibrinogemias

Other rare coagulation disorders

Fibrinolysis and defects of the fibrinolytic pathway

Disseminated intravascular coagulation

Lupus anticoagulant

Acquired disorders of coagulation

Haemostasis in the Newborn

Bleeding disorders in the Newborn

Disorders of haemostasis and thrombosis

Disorders of erythrocytes Part II

Path physiology of thrombosis

Inherited thrombotic disorders

Laboratory testing of prothrombotic state

Thrombosis in adults: Management issues

Paediatric issues in thrombosis

Thrombosis and pregnancy

Bone marrow failure syndrome

Haematological manifestation syndrome disease

Red cell disorders in pregnancy

Red cell disorders in the new-born

Polycythemia

Infections and haematological problems

- Miscellaneous topics
- Myelodysplastic syndrome
- Idiopathic myelofibrosis/essential thrombocythemia
- Non Hodgkin's lymphoma
- Hodgkin disease
- Plasma cell disorders
- Histiocytosis
- Infections and blood transfusions
- Complications of blood transfusion
- The haematological manifestation of HIV
- Consultative haematology
- Blood and component therapy
- Blood safety program

Annexure- I

Check list for Fellow in Hematopathology

1. Do daily:

a). Take up cases for evaluation

b). Perform bone marrow aspiration and biopsy

c). Enquire about problem/ interesting cases

d). Go to Clinical Departments rounds

e). Review on your own, then with pathologist of unknown slides.

1. Do regularly, as the case comes up:

a). processihg and Interpretation of flowcytometry

b). Perform and interpret FISH and PCR results.

c). Procedural techniques in coagulation lab, and other investigations

d). Go to Tumor Board meetings.

e). Special staining

2. Do/ watch at least once:

Date Completed	
_____	_____ a. Follow up the diagnosis of the different cases.
_____	_____ b. USG guided sample collection.
_____	_____ c. Perform different special staining.
_____	_____ d. Stain and independently interpret

e. Perform PCR test.

f. Perform FISH test.

g. Perform serum tumor marker Assay.

h. Reading the departmental slides.

i. IHC Panel

Design and interpretation in Lymphoma

Design and interpretation in round cell tumor

Design and interpretation in Unknown primary

j. Tumor Board Proceeding (Minimum 6)

Annexure - II

Overview of Hematopathology PDCC Programme

Required Rotations and Supervisors

Sl. No.	Rotation	Supervisors	Length
1.	Lymphoma- leukemia lab		
2.	Coagulation Lab		
3.	Hematology Lab		
4.	Flow cytometry lab		
5.	HPLC Lab		
6.	Cytogenetic & molecular Lab		
7.	Clinical Chemistry Lab		
8	IHC Laboratory		
9	Thalassemia clinic		
10.	Hemophilia clinic		
11.	Clinical hematology		
12.	Pediatrics		