

**Post Doctoral Certificate Course (PDCC) in  
Renal Pathology**

**AMRITA INSTITUTE OF MEDICAL SCIENCES (AIMS), KOCHI, KERALA**

1. **Period of Course** :One Academic Year

2. **No of Candidates:** One per year

3. **Eligibility**

M.D Pathology from MCI recognized Institution

4. **Mode of Selection:**

Based on written MCQ based entrance examination and interview

5. **Stipend**

Candidates are eligible for stipend as per the prevailing rule. Resident should give a refundable deposit in the beginning of the course. No refund will be available if any resident quits the course in midway.

6. **Training Program**

Training programme will be of one academic year. It will be a full time program in renal pathology. Short postings in transfusion medicine, clinical pathology, cytology, molecular biology, microbiology, biochemistry, nephrology, solid organ transplant unit and optional postings in electron microscopy are also included in the curriculum.

7. **Feasibility of the program**

PDCC in Renal Pathology is a specialized structured post-doctoral training program. Department of Pathology, Amrita Institute of Medical sciences started reporting renal biopsies in the year 1998 and now, it handles around 2000 renal biopsies in an year with complete work – up of the biopsies including panel of histochemical stains and seven immunofluorescence markers for all the biopsies. After the start of the renal transplant program in 2001, the department has been successfully handling transplant biopsies, both in the initial evaluation, protocol biopsies and in follow up after transplants. Immunohistochemical markers for C4d and post-transplant viral infections have been procured and are utilized in work up of biopsies. Regular weekly renal pathology clinico-pathology conferences(CPC) are held for discussion and correlation of biopsy and clinical findings. 4 faculty members ( Dr Annie Jojo, Dr Seethalekshmy N V , Dr Smitha N V and Dr Jyotsna Yesodharan ) in the department have Post-doctoral training in nephropathology

(Fellow ISN-ANIO in Clinical Nephropathology). Faculty regularly and actively participate in the National and International CMEs in Renal Pathology. The laboratory services are NABL accredited since 2007. In July 2015 the department organised the 10<sup>th</sup> international CME in renal and transplantation pathology (ISRTPCON 2015) at Amrita Institute of Medical Sciences under the guidance of ISRTP.

8. **Academic & Teaching Activities :-**

The candidates will review all the renal and transplant biopsies with the consultant Immunofluorescence (IF) All the IF stains could also be viewed by the students. They will be trained in the technical procedures for light microscopy (LM), special stains, immunofluorescence and Immunohistochemistry(IHC) ,Urine examination and microscopy

Nephrology: for familiarization of clinical scenario of cases.

Electron Microscopy (EM) : Optional posting for 10 days in house or at a teaching institution with established Electron microscopy facility for Nephropathology.

HLA and transplant immunology : All candidates should be proficient in the techniques of tissue typing and cross-match procedures with a minimum of 10 days posting in the Molecular biology lab.

Biochemistry : Basis of testing for routine biomarkers and drug assays.

Transfusion medicine: Blood Banking techniques including apheresis.

Microbiology : To gain acquaintance with the Elisa technique and complement assays.

Urology and solid organ transplant : To gain acquaintance with procedure and complications of renal transplantation

Each candidate is expected to participate in Journal Clubs, seminars, Group discussions, Case discussions & combined grand rounds.

9. **Aims and objectives of the course:**

PDCC in Renal pathology will enable the resident to become familiar with diagnostic aspects of medical and transplant renal biopsy conditions, infectious, cys-

tic and metabolic conditions diagnosed by light microscopy, immunofluorescence, and immunohistochemistry and differentiated by electron microscopy when required.

The candidate after selection will be posted in Surgical Pathology Division in Renal Pathology rotation of Department of Pathology for one year during the fellowship

The academic structure of the course will involve regular participation in routine patient service and study and discussion of study set cases in Renal Pathology. Participation in scientific activities of the department is mandatory with weekly short topic presentation, slide seminars, clinico-pathology rounds, journal club, and technical discussion.

The resident is expected to see the renal biopsy procedure at least thrice during the rotation. The resident should also observe processing of tissue in coordination with histotechnologists for LM/IF. The resident will attend renal transplant and nephropathology conferences (held on every Wednesday at 3pm-4.30pm) . Thus, the resident will spend significant time in directed, focused self-study followed by review sessions to maximize learning during this rotation

Candidate must maintain log book of daily academic activities with regular attestation by faculty.

### **Syllabus**

There is a need for specialists in Renal Pathology to be able to integrate increasingly complex advances in Laboratory sciences with clinical management of patients in renal diseases. Specialized training in renal pathology thus facilitates providing of skills to interact as a consultant for renal diseases and to be competent in laboratory aspects of native renal and transplant disease conditions

#### **10 . Organization of services pertaining to the course within the Department:**

Renal Pathology services are well established in the Department of Pathology with complete histochemical, immunofluorescence and immunohistochemical work up of all the native and transplant biopsies. Transplant Pathology services are also offered by the Department in the initial evaluation of donors, recipients, protocol biopsies and in follow up after transplants. Immunohistochemical markers for post-transplant viral

infections and C4d are available. Urgent transplant biopsies are reported on an emergency basis on the same day .

Department of Pathology, AIMS handles renal biopsies from Departments of Nephrology, Medicine, Paediatrics and Rheumatology in addition to referral biopsies from many hospitals in Kerala and the neighbouring states.

Urine Cytology screening for polyoma virus in transplant patients is provided in the Cytology division of Pathology. Urine examination for RBCs, WBCs, deposits and crystals are provided in the Clinical Pathology laboratory.

**Other departments involved in the training program** are Nephrology, Molecular Biology, Biochemistry, Microbiology , Transfusion Medicine , Urology and Solid Organ Transplant.

#### 11. **Eligibility for appearing in the Examination :**

- The candidate will have to conduct a small study and present it at any of the conferences of Pathology (IAPM – State/National) ISRTP, Nephrology (ISN) or Transplantation (ISOT). The candidate will be encouraged to publish the results
- Each candidate has to attend periodic internal assessment conducted by the faculty of the department.
- The candidate is expected to maintain a log book of daily activities
- The candidate must have atleast 80 % attendance.

#### 12. **List of skills to be learnt at the end of the program:**

- Interpretation of renal biopsy in diagnosis of native medical diseases of the kidney
- Interpretation of renal biopsy in diagnosis of transplant diseases of the kidney
- Interpretation of serological, biochemical and immunologic findings in correlation with clinical presentation and morphologic findings in biopsy.

#### 13. **Evaluation :**

##### **Final Examination - University**

**Theory :** 2 papers of 100 marks each.( 200 marks)

Paper 1 – Basic Techniques including light microscopy, immunofluorescence and Electron Microscopy, Native Diseases of the kidney (100 marks)

Paper 2 - Transplant diseases of the kidney and recent advances(100marks)

**Practical examination** will consist of Practical & Viva voce (200 marks)

Evaluation will be done by 2 examiners

Internal Examiner – 1

External Examiner – 1

Theory – 200 marks

Practical and VIVA – 200 marks

**Total - 400 marks**