



College of Physicians and Surgeons of Mumbai

Syllabus for CPS-PG-Course

DNEP-DIPLOMA IN NEPHROLOGY

College of Physicians and Surgeons of Mumbai

CPS House, Dr. E. Borges Marg, Parel, Mumbai – 400012.

DNEP-DIPLOMA IN NEPHROLOGY

AIMS AND OBJECTIVES

The programme aims at training a physician in the specialty of Nephrology encompassing the related knowledge, skills, research methodology and attitudes which will enable him/her to function as an independent clinician/consultant, a teacher or a research scientist.

During the period of training the candidate is expected

To acquaint himself/herself with the past and current literature on relevant aspects of basic, investigative and clinical nephrology.

To acquire performance skills for diagnostic and therapeutic procedures and interventions.

To diagnose, plan and interpret investigations and treat various acute and chronic kidney ailments by relevant therapeutic methods.

To identify, frame and carry out research proposals in the specialty.

To acquire thorough knowledge of internal medicine and allied general and clinical disciplines to ensure appropriate and timely referrals.

To acquaint with relevant education delivery system to be able to function as a health educator.

COURSE DESCRIPTION

Eligibility Criteria for Candidates:

i. A candidate should possess MBBS degree/ equivalent degree as per provisions of Indian Medical Council Act.

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ii. Candidates having a recognized 3 years degree Qualification (MD/MS/DNB) in any General Medicine

or 2 years Diploma Qualification in General Medicine

Duration of the Course : 2 years

SYLLABUS

Applied basic sciences knowledge relevant to the field of nephrology including electrolyte and acid base disorders. Investigative techniques, selection and interpretation of results Pathogenesis of renal diseases and renal histopathology

Diseases of the urinary tract (glomerular diseases urinary tract infection, tubulointerstitial diseases, inherited diseases, toxic nephropathies, systemic diseases with renal involvement, renal stone disease, urinary tract obstruction, vascular diseases of kidney, hypertension, neoplasia, etc.)

Renal failure (diagnosis and medical management) Principles and practice of dialysis

Renal transplantation

Recent advances in nephrology Biostatistics and clinical epidemiology

Ethics, psychosocial, economics of management of renal diseases, human organ transplant act and medico legal aspects of transplantation

CURRICULUM

Training will be exclusively on whole time in-service basis on the residency pattern. (2 Years – Full Time)

The programme will impart a sound training in the diagnosis and management of patients with renal disorders. During the training period, the candidate shall take part in all the activities of the department including inpatient and outpatient nephrology care, laboratory and investigative work up, lectures, seminars, conferences, group discussions and various other clinical and teaching assignments. The candidate will work as a member of the renal team and will be given the responsibility of investigation and therapeutic care of all patients under the direct guidance of the consultants in Nephrology. He will be first on call for routine and emergency renal consultants. Each candidate will go through the following rotations in various areas/subspecialties of nephrology during 2 years of training in Nephrology.

(1) Indoor services/Outpatient Clinics/Consultations-	1 years
(2) Dialysis-	6 months
(3) Renal transplantation- The candidate would be involved in the pre-transplant, immediate post-transplant and late post-transplant medical management of renal transplant recipients and the donors including immunosuppressive therapy, immunological monitoring, diagnostic and therapeutic interventions in patients with allograft dysfunction including renal allograft biopsy and ultrasound evaluation of the allograft.	
(4) Critical Care Nephrology- Intensive care nephrology including management of electrolyte and acid base problems, CRRT and dialysis of critically ill patients with multi organ failure.	
(5) Interventional Nephrology-	

Various procedures in nephrology including renal ultrasonography, renal biopsy, insertion of peritoneal dialysis catheter and hemodialysis, vascular access and monitoring.	6 months
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Clinical training schedule will include the following:

Bedside rounds -daily

Mortality meeting - once aweek

Seminar - once in twoweeks

Grand rounds - once aweek

Journal club - once in twoweeks

Renal histology conference - once in twoweeks

Clinical case discussion - once aweek

Transplant meeting - once aweek

Nephro-urology conference - once aweek

Nephro-radiology conference - once aweek

Outpatient nephrology care including renal transplantclinic

Didactic Lectures

A minimum of 15-20 lectures/year covering the recent advances in all aspects of renal diseases would be delivered by consultant faculty. In addition, candidates will be required to attend the complete, short term basic and clinical courses on

Bio-statistics

Research methodology and experimental lab medicine relevant toNephrology

Use of Computers inMedicine

Bio ethics, ethical issues in transplantation including “Human Organ TransplantAct”

InterventionalProcedures

A candidate will be required to have achieved proficiency in performing and supervising hemodialysis, peritoneal dialysis and renal biopsies. He would be expected to have performed a minimum of 50 renal biopsies, 300 hemodialysis including CVVHD, CRRT and 50 peritoneal dialysis. The candidate would be expected to involve and be trained in all aspects of CAPD programme. The candidate would also be expected to have inserted at least 50 internal jugular, 50 femoral and 50 subclavian vascular access catheters. The candidate would maintain record of all the procedures/ interventions in a log book, which would be certified by the Head of the department. A proficiency certificate from the head of the department regarding the clinical competence and skillful

performance of procedures by the candidate will be necessary before he would be allowed to appear in the examination. Six monthly internal assessment would be done to monitor and evaluate the training in various areas/ subspecialties of Nephrology.

Investigative work-up

The candidate is expected to perform routine urine examination and ultrasonography. In addition he/she must familiarize himself/herself with the following investigations:

Laboratory:

Electrolyte and acid base analysis

Renal function tests

Auto analyzer functioning

Renal pathology interpretation including immuno-fluorescence and electron microscopy.

Radiological:

Intravenous urography

Micturating cystourethrography

Digital subtraction angiography

Selective renal angiography and interventional angioplasty and stenting

Selective renal venography

Doppler studies

Antegrade and retrograde pyelography

CT imaging

Magnetic resonance imaging

Nuclear Medicine:

Various renal isotope imaging and functional techniques

Urodynamic studies

Microbiology:

Viral, Bacterial and fungal cultures, Serological and PCR techniques

Immunological test:

ANCA, ANA, anti dsDNA, complement, anti GBM ab, cryoglobulin, immunoelectrophoresis

Tissue typing:

Cross match, serological typing, molecular HLA typing, PRA

Renal function testing:

Renal plasma flow, GRF

Renal concentrating, diluting capacity

Microalbuminuria

Proteinuria measurement

Urinary acidification

Renal sodium and potassium handling

DNEP-DIPLOMA IN NEPHROLOGY**EXAMINATION PATTERN****Theory Examination:**

PAPER I	PAPER II	PAPER III
Basic Sciences as applicable to nephrology	Clinical Nephrology including Pathology, pathophysiology and therapeutic aspects	Recent advances in nephrology
Section I	Section I	Section I
Q.1. 10 Marks	Q.1. 10 Marks	Q.1. 10 Marks
Q.2. 10 Marks	Q.2. 10 Marks	Q.2. 10 Marks
Q.3. 10 Marks	Q.3. 10 Marks	Q.3. 10 Marks
Q.4. 10 Marks	Q.4. 10 Marks	Q.4. 10 Marks
Q.5. 10 Marks	Q.5. 10 Marks	Q.5. 10 Marks
	Total 50 Marks	Total 50 Marks
Section II	Section II	Section II
Q.6. 10 Marks	Q.6. 10 Marks	Q.6. 10 Marks
Q.7. 10 Marks	Q.7. 10 Marks	Q.7. 10 Marks
Q.8. 10 Marks	Q.8. 10 Marks	Q.8. 10 Marks
Q.9. 10 Marks	Q.9. 10 Marks	Q.9. 10 Marks
Q.10. 10 Marks	Q.10. 10 Marks	Q.10. 10 Marks
Total 50 Marks	Total 50 Marks	Total 50 Marks
Section I + II = 100 Marks	Section I + II = 100 Marks	Section I + II = 100 Marks
Total Theory = 300 Marks, Passing = 150 (i.e. 50%) Marks in aggregate		

Practical Examination:		Marks
Paper - IV	Clinical Practical	100
Paper - V	Oral & Viva	100
Paper - VI	Case	100
Total Marks	(Aggregate marks for passing is 50% out of 300)	300

BOOKS:

Following books and journals are suggested for reading. Latest edition should be made available in central/departmental library.

The Kidney- Brenner and Rector

Diseases of kidney and urinary tract- Schrier and Gottschalk

Heptinstall's Pathology of the kidney- J Charles Jennets

Hand book of dialysis- Daugirdas

Kidney Transplantation- Peter Morris

Oxford Text Book of Nephrology- Alex Davison, Stewart Cameron et al

Massry and Glassock's Text Book of Nephrology- Saul G Massry and RJ Glassock

The Kidney: Physiology and Pathophysiology- DW Seldin and GGiebisch

Essential Atlas of Nephrology- RWSchier

Immunological Renal Diseases- EG Neilson and WGCouser

Journals

American Journal of Nephrology

Kidney International

American Journal of Kidney Diseases

Nephrology Dialysis and Transplantation

Journal of American Society of Nephrology

Seminars' in Nephrology

Indian Journal of Nephrology

Electronic edition of Uptodate in Nephrology and Hypertension

Current opinion in Nephrology and Hypertension

New England J of Medicine

New England J of Medicine

Lancet