“4C KD Physicians II, 2013”
The Second
Cairo University Compact Clinical Course on Kidney Diseases for Physicians

2013

Rationale and Aim of the Course:

The course is a contribution proposed by the Nephrology Department, Cairo University to improve patient service in the community by introducing basic educational clinical needs for doctors managing patients with kidney disease.

The course targets internists and junior nephrologists as well as “under-trained” practicing nephrologists in under-privileged sectors of the health care system.

It aims at:

- providing them with the knowledge and essential clinical skills to enable them to screen, prevent and detect acute and chronic kidney disease.
- to enable them to develop their basic clinical skills to manage frequently encountered acute and chronic kidney diseases and manage the anticipated complications and refer to nephrologists at the appropriate time.
- to provide them with information about resources for continuous medical education to upgrade and update their knowledge and create a link between the students and our academic institution to provide advice about further education and/or clinical advice in their practice.

Organising Institution
Departments of Nephrology and Internal Medicine, Kasr El-Aini School of Medicine, Cairo University
Detailed Objectives:

1. To identify populations at risk of chronic kidney disease
2. To evaluate patients for detection kidney disease
3. To assess risk factors for progression of chronic kidney disease
4. To distinguish between acute, chronic and acute-on-chronic kidney disease
5. To plan management strategies to prevent risk of development of kidney disease
6. To plan management strategies to halt the progression of chronic kidney disease
7. To identify curable kidney diseases
8. To recognise the patterns of presentation of kidney diseases
9. To anticipate complications of chronic kidney disease
10. To recommend treatment of complications of chronic kidney disease
11. To manage common forms of acute kidney injury
12. To plan appropriate management of hypertension
13. To recognise associations between renal disease and pregnancy
14. To manage patients with urinary tract infection
15. To recognise the association between kidney disease and cardiovascular risk
16. To prescribe nutritional advice for patients with chronic kidney disease
17. To employ diagnostic procedures available for diagnosis of kidney diseases and their complications
18. To manage commonly met electrolyte disturbances
19. To define the minimal requirements of a hemodialysis unit
20. To prepare chronic kidney disease patients for renal replacement therapy
21. To locate resources for continuous medical education
22. To arrange for clinical and educational links with senior and academically based clinicians

Teaching sessions
A total of 36 teaching sessions are included in the curriculum, each lasting for 30 minutes (total 18 hours) over 6 days.
Curriculum will include 6 main categories of teaching sessions:

1. Basic Lectures on core subjects
   These are the basic classic teaching lectures with a chance for the students to discuss some questions at the end of the lecture with the lecturer.
2- **Meet the expert sessions**
These are interactive sessions of free communication between the students and a senior member of faculty on a specific topic title in the presence of a session moderator. They usually start by brainstorming clinical questions followed by free communication questions from the students to the faculty member.

3- **Group discussions**
These are interactive sessions that aim at “bringing out” the clinical concepts and opinions of the students and correcting any incorrect clinical dogmas in their clinical practice. This differs from “meet the experts session” in that the faculty member will be the one to initiate conversations and discussions and listen to the students’ opinions. The faculty members will sit in a “round-table discussion” meeting with the attendants to deliver his message in an interactive way.

4- **Interactive CME classes/seminars**
These aim at teaching students the basics of attaining CME. Students will be informed on how to search for knowledge from its sources in books, journals and the internet. They will then be given assignments and will make presentations to confirm that they can apply what they were taught.

5- **Advanced Nephrology**
These sessions are meant to present “advanced” up-to-date subjects in nephrology in order to update attendants on the changing and controversial issues in nephrology and to motivate them to keep up with continuous medical education and to engage in research. The topics of these lectures will be determined after a faculty meeting before the course starts.

6- **Clinical case workshops**
These are interactive clinical case-based sessions where the lecturer will present specific clinical cases and raise queries to the students. The students will then break-up into small groups to discuss the answers among themselves and then present the answers to the class and discuss them with the lecturer.
Evaluation:
The course will grant the attendees a **certificate of attendance** only if they attend >20/34 sessions

A **certificate of success** with allocated will be given if the attendant scores >60% of the evaluation which will be allocated a total of 100 marks distributed as follows:

a-30 marks for attendance
b-40 marks for an MCQ exam at the end of the course
c-30 marks for assignments, and contributions in interactive sessions and assignments given.

**Curriculum (this is not the programme schedule)**

1- **Diagnostic tools in nephrology (lecture)**
Explain the types, values, indications and hazards of various imaging techniques in nephrology.
Explain various “clinically-relevant” lab tests for evaluation of kidney function including measured and estimated GFR and their pros and cons.
Elucidate and clarify the value of urinalysis and proteinuria detection.
Explain renal biopsy indications and contraindications as well as clinical tips on technique, availability and various “clinically relevant and available” histo-pathological techniques.

2- **Proteinuria: causes, risks and management (lecture)**
This lecture should focus on proteinuria and NOT on the individual diseases that cause it.
An overview on the causes of proteinuria including various forms of chronic kidney disease and define the risks on the kidney as well as the associated cardiovascular risks.
A short account on the effect of proteinuria on renal disease progression both pathogenetically and epidemiologically.
Lab techniques for detection of proteinuria.
The various medical interventions for management of proteinuria with focus on bp control and RAS blockade.

3- **Progression of renal disease (lecture)**
Populations at risk for CKD and methods for screening
Explain the concept of renal disease progression.
Define the risk factors of CKD progression and explain how to **anticipate, screen and detect** these risk factors.
A short, non-comprehensive conclusive overview of managing these risk factors (details of treatment are discussed in other lectures)

4- **Drugs and the kidney (lecture)**
Explain the concepts of: drug-nephrotoxicity and its mechanisms and “famous” drugs causing nephrotoxicity; the concept of renal dose-adjustment for drugs in CKD and ESRD and AKI; and the concept of drug interactions between commonly prescribed drugs to “renal patients.”

5- **Nephrotic and nephritic syndrome (clinical workshop)**
Explanation of the difference in presentations
Emphasis on the algorithm required to reach a final diagnosis including proper histopathological evaluation
Emphasis on the value of the “general” measures of management
Hint about outcomes
Overview about the options available for specific therapy

6- **Continuous medical education- keeping up with science (CME)**
initial lecture to inform students about scientific resources including suggestions of text-books and web-sites and how to use and search them to reach the information they may need to manage their patients and update their knowledge.
Assignments will be given to be reviewed in subsequent sessions

7- **Management of CKD patients in the clinic (clinical workshop)**
Overview of the procedures undertaken for routine follow up of CKD patients including:
a- follow up of anticipated CKD complications viz anemia, electrolyte and acid base disturbances, CKD-MBD, hypertension, UTI, comorbidities e.g. diabetes
b- vaccination and immunisation
c- identification, detection and management of reversible acute-on-chronic events
d- intervals of routine visits and investigations
e- timing of referral to nephrologist
8- Management of anemia in renal patients (lecture)
Brief account on causes and pathogenesis
Focus on value of iron studies, use of iron and erythropoietin and denouncing frequent “avoidable” transfusions
Explanation of the concept of resistant anemia and its investigations and management

9-CKD-MBD (lecture)
Brief explanation of pathogenesis
Reviewing the clinical presentations (lab abnormalities, myopathies, fractures) and complications (bone, vascular, survival..etc)
Clinical approach to management using dietary restrictions, phosphate binders, vitamin D, and newer analogues and calcimimetics, role of parathyroidectomy

10- Preparing patients for renal replacement therapy (group discussion)
Timing of initiation of RRT
Choice between HDx, PD, Tx
Outcomes of the 3 modalities
Preparation for HDx: access (choices for temporary and permanent access and their pros and cons and care of access)

11-Nutrition in CKD (group discussions)
Lay the concept of variability of diet according to type of renal disease viz AKI, CKD, CKD on RRT, nephrotic syndrome, hypertension, stone former..etc
Explain the different approaches for management of phosphate, potassium, sodium, lipids, calories and proteins in diet of renal disease patients with particular focus on “clinical” advice given to the patient i.e. in terms of dietary constituents rather than dry figures for daily allowances.

12- Glomerulonephritis and vasculitis management (Meet the expert)

13- Hemodialysis principle (lecture)
The principles of convection and diffusion
The types of dialyser membranes
The dialysis circuit
The basics of dialysis-water treatment
The principle of solute clearance and factors governing it

14-Basics of work at a hemodialysis unit (lecture)
Infection control
Hemodynamic monitoring
Routine lab monitoring
Dry weight evaluation
The concept of adequacy of urea clearance with emphasis on determinants including time, dialyser area and blood flow
Nurse education

15-Managing complications during chronic hemodialysis sessions-(group discussion)
Clinical causes and actions taken to manage chest pain, hypotension, cramps, vomiting, headache, dyspnea, loss of consciousness,
(The main aim is to “wash-out” the dialysis unit “myths” and beliefs held by the dialysis unit staff and patients relating to causes and management of the dialysis session )

16- CME training (CME)
meeting to follow up students on their pre-specified CME assignments

17- Tropical Nephrology
This session is expected to discuss renal diseases peculiar to the tropics and subtropics including those related to viral and parasitic infections as well as those related to environmental and genetic factors.

18- Advanced nephrology (lecture)

19- Acute kidney injury, diagnosis (lecture)
Causes of acute renal insult
Differentiating acute from chronic renal disease and acute-on-chronic
Algorithms and diagnostic tools for working the final diagnosis
Overview of expected metabolic derangements anticipated in AKI and tools for monitoring them

20-AKI management (lecture)
The basics of calculating fluid balance and requirements
Role of dialysis and dialysis modalities in AKI
Brief discussion on specific therapies of common causes of AKI

**21-Metabolic acid/base disturbances (clinical workshop)**
Causes and diagnosis of metabolic acid/base disturbances
How to read the acid/base lab report
Acute management of acid/base disturbances
Impact and management of chronic acidosis

**22-Potassium disorders (clinical workshop)**
Causes of hypo and hyperkalemia
Acute and chronic management of potassium abnormalities

**23-Sodium disorders (clinical workshop)**
Causes and consequences and management of acute and chronic hypo and hyper natremia

**24- Advanced lecture**
25- Hypertension (group discussion)
Overview on the relationship between renal disease and hypertension
Targets of BP in CKD and other subpopulations e.g. elderly, diabetics
Therapeutic drug options

26- The kidney and the cardiovascular system: (lecture)
Emphasise the close association between cardiovascular system and the kidney and impact on morbidity/mortality in CKD
Discuss the various forms of cardiovascular disease associated with CKD (including coronary disease, peripheral vascular disease, vascular calcification, valvular disorders, arrhythmias, cardiac chamber remodeling…..etc)
Explain the approach expected from the nephrologist to prevent, screen and treat these conditions.

27- Hepatic- renal disorders (lecture)
Discuss the differential diagnosis of renal disease in hepatic patients e.g. hepatorenal vs. ATN vs. HCV-related disease, prerenal insults…etc
Clinical management with focus on reaching the proper final diagnosis and lines of therapy.

28- Renal disease in pregnant women (clinical workshop)
Special emphasis needed on pre-eclampsia, UTI, post-partum AKI (including ATN, TTP….etc) as well as impact of pregnancy on pre-existing renal disease and impact of pre-existing renal disease on pregnancy outcomes

29- CME training (CME)
meeting to follow up students on their pre-specified CME assignments

30- Advanced nephrology (lecture)
31- Urinary tract infections (lecture)
Explain the factors predisposing to UTI and the clinical presentations and complications
Sterile pyuria
Resistant UTI
Investigating recurrent UTI
Treating UTI in different situations (reflux, diabetes, prostatitis, renal transplant recipients…etc)

32-Diabetic nephropathy (clinical workshop)
Focus on impact and epidemiology
Focus on screening using simple lab techniques in asymptomatic individuals routinely
Explain the approaches used for prevention and management of various stages of diabetic nephropathy

33- The patient with urological disorders
Managing recurrent and obstructive urolithiasis, prostatic enlargement, atonic bladder, ureteric stenosis and reflux as well as other urological disorders affecting adults and commonly presenting to the nephrologist.

34- Nephrological consultations in the ICU (Meet the expert)

35- Advanced Nephrology lecture

36-EVALUATION, MCQ exam