

OVERVIEW OF OBJECTIVES AND RESPONSIBILITIES

Welcome to Nephrology!

The Nephrology Service at the University of Alberta Hospital encompasses all aspects of renal care, including consultative general nephrology, fluid and electrolyte disturbances, acute and chronic renal failure, and the practice of all renal replacement modalities (peritoneal dialysis, hemodialysis, and transplantation). There are currently 19 adult and 2 pediatric nephrologists, with 30 active in-center beds on 5A2 and 5A4, 2 in-center hemodialysis units (5B1 and 5C2) as well as a satellite hemodialysis center and the home peritoneal dialysis center, both located at the Aberhart center. In addition, over 80 kidney transplants are done at the UAH annually. There also over 350 patients followed in the Renal Insufficiency Clinic at 5H2.30

Given the large service responsibilities of this regional program, the division employs a physician associate (Dr. Steven Caldwell) who provides care to the chronic renal failure patients admitted for the placement of dialysis access, and 3 transplant nurse clinicians who manage many of the day-to-day outpatient problems in recipients of renal transplants. The Home Peritoneal Dialysis Unit also has nurses on –call daily, including weekends, from 0800 to 2300 hours; they screen calls from peritoneal dialysis patients and their families, and community family physicians. If you are called to assess a peritoneal dialysis patient in the Emergency room where the primary problem appears to be dialysis-related (ie. Peritonitis, fluid overload, glucose control), please contact either the Home Dialysis Unit or the nurse on-call (after hours). They frequently see the patient in the Emergency room, initiate the peritonitis protocol, and contact the Nephrologist on –call, without involving the resident.

TRAINING OBJECTIVES

The resident should become familiar with the common forms of renal disease with regard to their pathogenesis, presentation, investigation, and management. These include:

1. Fluid and electrolyte imbalances: acidosis and alkalosis, hypo and hyperkalemia, hypo and hypernatremia, dehydration, fluid overload.
2. Hypertension of all causes, its complications and management.
3. Common forms of glomerulonephritis and nephrotic syndrome, approach to investigations and management.
4. The approach to hematuria.
5. Acute renal failure, differential diagnosis and management.
6. Drug-induced renal disease and the use of drugs in renal failure.
7. Calcium, PTH, Vitamin D metabolism and relationship to metabolic bone disease.
8. Chronic renal failure, pathophysiology and conservative management.
9. Principles of dialysis therapy and long-term dialysis complications.
10. Renal stone disease, investigations and management.

These objectives are listed in the objective-based evaluation form appended. It is your responsibility to ensure that all the objectives have been met during the rotation.

CLINICAL SKILLS

There are special considerations when investigating and treating renal patients.

History Taking

It is important in the history to determine the chronicity of disease. Is there a familial nature to the patient's complaint? The possible importance of early pathological events of childhood and pregnancy should be considered. Has there been exposure to environmental toxins? Is diabetes involved? Especially in a female, is there a history of analgesic abuse? What other medications is the patient on? Are high risk behaviours present? One can usually determine from a careful history if the patient has acute, acute on chronic, or chronic disease.

Functional Inquiry

The functional inquiry should stress what problems renal dysfunction might be causing. A search for associated symptoms must be conducted with particular attention paid to a history of rash, arthralgias or arthritis, involvement of the eyes, ears, sinuses, or respiratory tract.

Physical Examination

Renal patients in acute and chronic renal failure can provide a wealth of classical physical signs seen at a distance in medical school, even though the kidney itself is rarely audible or palpable. Particular attention to hydration, circulatory status, palpable masses, prostatic enlargement, skin changes and neurological findings can often pinpoint the disease etiology as well as the extent of the disease.

Urinalysis

The examination of a renal patient is seldom complete without looking at the urinary sediment of that patient. Important clues can often be obtained to assist in the classification of disease and the differential diagnosis.

Use of Diagnostic Services

Nephrology, perhaps more than some other services, requires skilled use of the appropriate services both for diagnostic and for successful follow-up, particularly in the areas of chemistry, microbiology, and diagnostic imaging. The resident is expected to attend and contribute to the discussion in the weekly **renal biopsy** conference, particularly when the patients are being presented.

PARTICIPATION AT ROUNDS

A number of formal teaching sessions are conducted **each week** on the renal service (see attached schedule). These include Nephrology Grand Rounds, Renal Biopsy Rounds, Nephrology Journal Clubs, structured seminars, and Bedside Rounds to supplement usual ward rounds. Residents are expected to attend these rounds and, on occasion, will be active participants.

The Division of Nephrology also participates in morning subspecialty rounds, which cover core topics in nephrology. These seminars are held Thursday a.m. from 0745 to 0830 in 5H2.02. You will be given a manual with lecture notes covering the topics to be discussed, as well as a few acid/base problems you are expected to work through. Attendance is mandatory.

READING MATERIAL

The division maintains a small library of textbooks on the 11th floor of CSB. You will also be given a copy of the “Primer on Renal Disease” to use during your rotation, but it must be returned to Dr. McMahon or you will be held liable for its replacement. In addition, there are a couple of computerized resources (especially UpToDate in Nephrology) on the computer located in the renal fellows office (5A1). As a starting point, we have provided you with copies of several articles, which we believe, represent examples of evidence-based practice as it related to nephrology. These include copies of the DCCT report (Diabetes Control and Complications Trial), an article on the prevention of contrast nephrotoxicity, and the use of ACE inhibitors for their renal protective effects in certain renal diseases. These can be found in the notes given out at the Thursday morning rounds.

ASSESSMENT

In order to ensure that residents meet their training objectives, an informal meeting is held midway during the rotation to discuss the resident’s performance and identify deficiencies in the program so that they can be remedied. Residents are encouraged to bring up any concerns regarding resources, patient material, and teaching at any time in their rotation to the Program Director so that the problem can be identified and dealt with for the benefit of this and future rotations.

At the end of the rotation, each resident’s performance is evaluation by a Committee with input from the members of the Division who have had contact with the resident. Presentation and discussion at rounds, record keeping, communication skills, team work, clinical judgment and basic knowledge are all taken into consideration for the assessment.

In addition to the objective-based evaluation, a **written examination** in nephrology will be held at the completion of the ward rotation to objectively test your knowledge base in nephrology. The exam will contain short answer questions, focusing on aspects of renal medicine with which all internists should be familiar.

Please feel free to contact me should you need any advice or encounter any problems during your rotation.
Enjoy your experience on nephrology.

Dr. Alan W. McMahon
Program Director, Nephrology Residency Program.

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