VA HOSPITAL NEPHROLOGY CONSULTATION SERVICE

Each first year fellow rotates on the VA Nephrology Consultation rotation with the nephrology faculty member for 2-3 months of the training. This service covers all aspects of nephrology including acute consultative in-patient services and the care of in-patient chronic renal replacement therapy patients. Fellows also gain experience in the maintenance hemodialysis unit at the VA hospital, where the residents round with a multidisciplinary group twice weekly. In addition, while on the VA rotation, the nephrology residents participate in the active VA nephrology continuity clinic to extend their ambulatory experience with an emphasis on the renal manifestations of diabetes, hypertension and vascular disease. Fellows are expected to make initial evaluations and present the history, physical findings, assessment and plans to the nephrology faculty member. The fellow is expected to help teach and supervise medical residents and medical students on the VA Nephrology Consultation rotation.

Educational Goals:

The consultation service builds the foundations for a broad knowledge base in inpatient nephrology, by providing fellows exposure and opportunities to manage tertiary and quaternary referral patients, as well as managed primary care patients.

1. The fellow is expected to develop competency in providing compassionate and thorough care to a medically and socially diverse group of hospitalized patients and outpatients.
2. Fellows serve as team leaders on these services and have opportunities to develop teaching, leadership, and management skills with residents and students.
3. The purpose of this rotation is to provide the first year fellow with the education and expertise necessary to become proficient in general nephrology
4. To provide first year fellows with the education and experience to become proficient in managing outpatient peritoneal dialysis and hemodialysis patients.

Objectives:

<u>Patient Care</u>

Each fellow will rate as valuable the importance of being a nephrologist to a medically and socially diverse group of patients

Each fellow will be able to obtain and document a complete history and physical, formulate a thorough assessment and plan, and communicate this assessment to the primary care team

Each fellow will demonstrate the ability to make daily assessments of their patients and convey that information to the team through a variety of methods, including daily written progress notes

1. Specific educational goals are to provide clinical expertise and opportunities to gain experience in:
2. Acute renal failure and its approach (differential diagnosis, use of urinalysis, radiologic assessment, and treatment);
3. Chronic renal failure with associated conditions such as anemia and renal osteodystrophy and its approach (differential diagnosis, radiologic assessment, and treatment);
4. End-stage renal disease and associated conditions;

5. Principles and practice of hemodialysis, peritoneal dialysis and recognition of criteria for continuous replacement therapy;
6. Recognition of short and long-term complications of hemodialysis and peritoneal dialysis
7. Fluid electrolyte and acid-base abnormalities and its approach (differential diagnosis and treatment);
8. Hypertensive disorders both essential and secondary causes;
9. Renal disorders associated with pregnancy;
10. Urinary tract infections;
11. Drug toxicity, modification of medication dose in renal failure and with renal replacement therapy;
12. Glomerular and vascular diseases including diabetic nephropathy and atheroembolic disease;
13. Tubulointerstitial disease;
14. Cystic diseases and other genetic diseases;
    Renal biopsy (indications, performance and histologic review).

Medical Knowledge

The fellow will demonstrate a knowledge and understanding of the pathophysiology, diagnostic evaluation, and therapeutic management of a core group of renal diseases described above.

By the end of the consultation month, each fellow will have attended and participated in the educational activities listed in the teaching methods section.

By the end of the consultation month, each fellow is encouraged to complete some of the recommended readings (below)

Communication Skills

Each fellow will demonstrate effective communication skills with the attending physician by discussing each consultation or admission in a timely fashion

Each fellow will discuss the ongoing care of each patient with the appropriate attending daily

Each fellow will demonstrate effective teaching and feedback skills with interns, residents and medical students.

Each fellow will model effective interpersonal communication skills with patients, families, and allied health professionals

Professionalism

Each fellow will demonstrate compassion and understanding to a group of socially, economically and racially diverse group of patients

Each fellow will rate as comfortable his/her ability to assume the leadership role on the healthcare team

Each fellow will model appropriate team function by including allied health professionals in management discussions

Practice-Based Learning and Improvement

The fellow will incorporate basic knowledge of evidence-based medicine in evaluation and management of patient medical problems

Each fellow will continue the process of acquiring skills and documenting the procedures required by the ABIM, as listed in the procedure summary

Each fellow will model practice based learning and effective information seeking in the daily care of patients

Systems-Based Practice

The fellow will demonstrate competence in the integration of inpatient and outpatient care, and a systems approach to care, by demonstrating appropriate follow-up/discharge plans for all patients he/she has admitted

The resident will demonstrate an awareness of issues cost-effective medicine in patient care, by discussing the cost implications of a case/month with the attending physician

Each fellow will rate as valuable the contributions of other members of the health care team into management plans for patients

Each fellow will routinely evaluate the socioeconomic needs of his/her patients, including health insurance, access to care and co-payments necessary to provide care

By the end of consultation month, each fellow will have assumed care for patients of colleagues on the team and effectively transferred care of his/her own patients when not in the hospital

Teaching Methods

Teaching methods include rounds with the nephrology faculty member. Renal biopsies are reviewed with a renal pathology faculty member. In addition, radiological studies obtained are reviewed and if needed direct consultation is obtained from radiology faculty member. Fellows round twice weekly in the chronic hemodialysis unit at the VA while on this service. These rounds are conducted with the responsible attending nephrologists and with dedicated support staff (renal nurses, dietician, and social worker). There are didactic sessions pertaining to the specific educational goals in the Nephrology Core Curriculum Seminar Series, Nephrology Clinical Conference, Nephrology Clinical Journal Club, Clinical Research Conference, and Basic Science Conference. The nephrology faculty member may give didactic sessions to members of the Nephrology Consultation team. Suggested reading may include papers distributed by the nephrology faculty member. Suggested reading for modification of medication prescription in impaired renal function is Drug Prescribing in Renal Failure Dosing Guidelines for Adults, 4th Ed. by Aronoff, et al. Various topics may be covered in the Primer on Kidney Diseases, 2nd Ed. provided by the National Kidney Foundation, The Kidney, 4th Ed, by Brenner, Principles and Practice of Nephrology, by Jacobson and Poisoning and Drug

Overdose by Winchester and Primer on Metabolic Bone Disease and Disorders of Mineral Metabolism. Topics on renal replacement therapy are briefly covered by The Handbook of Dialysis, 3rd Ed. by Daugirdas, et al. and Principles and Practice of Dialysis by Henrich. There is access to PUBMED and Up-To-Date as well as other electronic medical literature databases in the fellows' conference room and all public workstations in the hospital.

Mix of Diseases:

Diseases encountered on this rotation include acute renal failure from all causes (pregnancy, pre-renal, atheroemboli, obstruction, rapidly progressive glomerulonephritis from vasculitis), nephrotic syndrome (primary and secondary causes such as SLE, amyloidosis), acid–base and electrolyte disturbances, chronic kidney disease in all stages (diabetes, hypertension, chronic glomerulonephritis, chronic tubulointerstitial disease), as well as other diseases.

Types of Clinical Encounters:

Patients may be seen as emergency room or inpatient consultation.

Patients' Characteristics:

Patients followed are those admitted to University Hospital. (Patients who are excluded from the rotation are patients on peritoneal dialysis and those patients followed by the Nephrology Transplant team.) These patients may include:

1. Those who develop acute renal failure in the non-Intensive Care Unit setting.
2. Patients with chronic renal insufficiency not yet with end-stage renal disease or renal replacement therapy.
3. End stage renal disease patients on renal replacement therapies of all types.
4. Patients with electrolyte and acid base disorders.
5. Patients with the nephrotic syndrome
6. Hypertensive and other disorders.

There is an average daily census of 10-15 patients on the VA Nephrology Consultation team's service. There are about 25 patients on chronic hemodialysis in the VA unit.

Services:

Fellows on this rotation will be asked to take care of patients by providing an outstanding standard of care as stated by the six core clinical competencies. Procedures involved are for patient care purposes. Fellows may facilitate care by phone calls for scheduling purposes however; other health care professionals will perform the most of these calls.

Procedures:

Procedures may include performance of native renal biopsy, urinalysis, placement of vascular access for hemodialysis and peritoneal dialysis treatments, and supervision of hemodialysis and peritoneal dialysis treatments. The nephrology faculty member evaluates the procedures performed by the fellow. Please see general curriculum regarding methods of evaluation of procedures and definition of proficiency. Nephrology faculty members supervise

these procedures unless not on the premises at the time of the procedure or if the fellow has performed 10 vascular access procedures satisfactorily.

Reading List:

1. Sibai BM, Kustermann L, Velasco J. Current understanding of severe preeclampsia, pregnancy-associated hemolytic uremic syndrome, thrombotic thrombocytopenic purpura, hemolysis, elevated liver enzymes, and low platelet syndrome, and postpartum acute renal failure: different clinical syndromes or just different names? Current Opinion in Nephrology and Hypertension, 1994. 3: pp 436-445.
2. Perazella MA. Drug-induced hyperkalemia: old culprits and new offenders. Am J Med, 2000. 109: pp 307-314.
3. Jennette JC and Falk RJ. Diagnosis and management of glomerular diseases. Medical Clinics of North America, 1997. 81(3): pp 653-676.
4. Greenberg A. Hyperkalemia: treatment options. Seminars in Nephrology, 1998. 18(1): pp 46-57.
5. Ellison DH. Diuretic drugs and the treatment of edema: from clinic to bench and back again. Am J Kid Dis, 1994. 23(5): pp 623-643.
6. Scolari F, Tardanico R, Zani R, Pola A, Viola BF, Movilli E, Maiorca R. Cholesterol crystal embolism: a recognizable cause of renal disease. American Journal of Kidney Diseases, 2000. 36(6): pp1089-1109.
7. Ifudu O. Care of Patients Undergoing Hemodialysis. N Eng J Med, 1998. 339(15): pp1054-1062
8. Pastan S. and Bailey J. Dialysis Therapy. N Eng J Med, 1998. 338(20): pp 1428-1437.
9. Thandhani R, Pascual M, and Bonventre J. Acute Renal Failure. N Eng J Med, 1996. 334(22) pp 1048-1460.
10. Madaio MP and Harrington JT. The Diagnosis of Glomerular Diseases, Acute Glomerulonephritis and the Nephrotic Syndrome. Arch Int Med, 2001. 161 pp 25-34.
11. Smuders YM, Jos Frissen PH, Slaats EH, and Silberbusch J. Renal Tubular Acidosis, Pathophysiology and Diagnosis. Arch Int Med, 1996. 156 pp 1629-1636.
12. Perazella MA. Crystal-induced Acute Renal Failure. Am J Med, 1999. 106 pp 459-465.
13. Srinivasan B, Bastacky, and S, Johnson JP. The Clinical and Morphologic Spectrum of Renal Cryoglobulinemia. Medicine, 2002. 81(5): pp 398-409
14. Scolari F, Tardanico R, Zani R, Pola A, Viola FB, Movilli E, and Maiorca R. Cholesterol Crystal Emolism: A Recognizable Cause of Renal Disease. Am J of Kidney Diseases, 2000. 36(6): pp 1089 -1109.
15. Nzerue C, Hewan-Lowe K, Pierangeli S, and Harris EN. “Black swan in the kidney”: Renal involvement in the antiphospholipid antibody syndrome. Kidney Int’l 2002. 62 pp 733-744.
16. Agodoa L, Appel L, Bakris G, Beck G, Bourgoignie J, Briggs J, Charleston J, Cheek D, Cleveland W, Douglas J, Douglas M, Dowie D, Faulkner M, Gabriel A, Gassman J, Green T, Hall Y, Hebert L, Hiremath L, Jamerson K, Johnson C, Kopple J, Kusek J, Lash J, Lea J, Lewis JB, Lipkowitz M, Massry S, Middleton J, Miller ER, Norris K, O’Connor D, Ojo A, Phillips RA, Pogue V, Rahman M, Randall OS, Rostand S, Schulman G, Smith W, Thornley-Brown D, Tisher C, Toto R, Wright J, and Xu S. Effect of Ramipril vs Amlodipine on Renal Outcomes in Hypertensive Nephrosclerosis. Jama Express, 2001 285(21): pp 2719-2728.
17. Rossert J. Drug-induced acute interstitial nephritis. Kidney Int’l 2001. 60 pp 804 – 817.
18. Levy JB, Turner AN, Rees, AJ, and Pusey, CD. Long-Term Outcome of Anti-Glomerular Basement Membrane Antibody Disease Treated with Plasma Exchange and Immunosupression. Annals of Internal Med, 2001. 131(1): pp 1033 – 1042.

19. Illei GG, Austin HA, Crane M, Collins L, Gourley MF, Yarboro CH, Vaughan EM, Kuroiwa T, Danning CL, Steinberg AD, Klippel JH, Balow JE, and Boumpas DT. Combination Therapy with Pulse Cyclophosphamide plus Pulse Methylprednisolone Improves Long-Term Outcome without adding Toxicity in Patients with Lupus Nephritis. Annals of Internal Medicine 2001. 135(4): pp 248 – 257.
20. Review: The Hepatorenal syndrome. Gut 2001 49 pp 729 – 737.

Pathologic Material:

Fellows review patient percutaneous renal biopsies as well as other pathologic material with renal pathology faculty members and nephrology faculty members.

Method of Evaluation:

The fellow is evaluated using the ABIM form for Evaluation of Clinical Competence, Categories evaluated include the core competencies of Patient Care, Medical Knowledge, Practice Based Learning , Interpersonal and Communication Skills, Professionalism, Systems Based Learning, evaluation of procedures above, and Moral and Ethical Behavior, and Overall Clinical Competence as a Specialist In Nephrology. The American Board of Medical Specialties Generic Form for Global Ratings of Resident Performance is also used which evaluate the 6 core competencies. Please see general Curriculum for details of the evaluation. These evaluations are filled out at the end of each rotation by the supervising Nephrology attending. The fellow evaluates the teaching of the nephrology faculty member using the form provided. Medical knowledge will be assessed once yearly (usually in February) using an in-service exam format.

Responsibilities/Supervision:

The nephrology fellow is responsible for the initial evaluation of new patients on the Nephrology Consultation rotation and follows up existing patients. There may be medical students and medical housestaff who rotate on the Nephrology Consultation rotation who participate in an initial consultation and follow up care. The nephrology fellow ensures that the evaluation and assessment and plans are similar to their own for each patient. The nephrology fellow assists in teaching these other members of the Nephrology Consultation team. The nephrology fellow contacts the nephrology faculty member prior to the start of any form of renal replacement therapy and writes initial orders for renal replacement therapy. The nephrology fellow communicates any concerns to the nephrology faculty member that might mandate review of the patient prior to rounds scheduled later in the day. The nephrology faculty member discusses patients and reviews the medical notes presented to the faculty member on a daily basis. The nephrology faculty member confirms the history, physical findings, and assessment and plans after interviewing and examining the patients. The nephrology faculty member discusses any modifications of the history, physical findings assessment and plans with the fellow. The nephrology fellow discusses with the house officers and other staff recommendations by the nephrology fellow and the nephrology faculty member. The nephrology faculty member may personally communicate with some physicians. The fellow and nephrology faculty member jointly decide which patients no longer will need to be followed by the Nephrology Consultation team. The nephrology faculty member supervises procedures unless the faculty member attending is not on the premises at the time of the procedure. The nephrology faculty member supervises all renal biopsies.