Division of Medicine

Department of Nephrology

Staff

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Department Overview

The Department of Nephrology and Hypertension focuses on all five major disease theme areas: chronic kidney disease (CKD), dialysis, renal transplantation, hypertension and general nephrology. The outcomes presented in this report are formatted under these specific theme areas.

Our department recognizes the benefits and challenges involved in reporting outcomes data within our subspecialty. By a joint effort between Davita Dialysis and the Department of Nephrology at CCF, dialysis services are followed and monitored in detailed and reported quarterly comparing a range of patient outcomes to both absolute standards as well as those achieved by other dialysis units regionally and nationally. This information consistently shows extremely high success rates at dialysis centers where CCF physicians and staff are involved as coordinators and medical directors.

The outcomes we have selected for each theme area in this report forecast some of the important clinical and scholarly activities we believe are crucial to the mission of the Department of Nephrology and Hypertension.

Chronic Kidney Disease

The department of nephrology has experienced nephrologists and professionals evaluating and managing all aspects of chronic renal failure from stages I to V. Patients have easy access to a multidisciplinary team approach to the disease including nephrologists, dietitians, social workers, vascular surgeons, interventional nephrologists, treatment option educators and nurses able to provide intravenous and subcutaneous injections.

Our team is known to deliver state of the art care for patients with CKD in South Florida.

The clinic accepts patients referred from Cleveland Clinic and outside physicians for evaluation and management of their CKD.

In addition to providing care, the clinic database is fertile ground for identifying and enrolling patients in clinical research projects.

The renal team is focused in arresting the progression of chronic renal disease and follows specific problems associated with this patient population. The data and findings obtained in our practice are consistently reviewed with patients and problems are addressed early in the continuum of CKD.

The check list below is performed routinely as part of our assessment and plan of care. This list is part of our CKD outcomes project. The enrollment of
patients in the Nephrology Clinic and use of the EMR permits the establishment of a CKD database of the demographics, clinical parameters and outcomes of these patients
All patients will have the following as basic part of their care:

I. Assessment of eGFR, baseline creatinine and CKD
TARGET: projected decline eGFR<4 mL/min/1.73m2 per year

II. Assessment of HYPERTENSION
TARGET: "Office/Ambulatory BP<130/80"

III. Assessment of ANEMIA OF CKD
TARGET: "HB 11-12 g/dL"
TARGET: "Ferritin 100-800 ng/mL, if hemoglobin not target"
TARGET: "TSAT% 20-50%, if hemoglobin not target"

IV. Assessment of METABOLIC BONE DISEASE:
TARGET: "Phosphorous 3.5-5.5 mg/dL"
TARGET: "Corrected Calcium 8.5-10.5 mg/dL"
TARGET: "iPTH 150-300 ng/L"
TARGET: "CO2>22 meq/L"

V. Assessment of LIPIIDS:
TARGET: "LDL<100 mg/dL; non-HDL<130 mg/dL if TGs>200 mg/dL"
LIPIDS PLAN:{CKD LIPID PLAN:19354}

VI. Assessment of NUTRITION:
TARGET: "In the absence of nephrotic syndrome or active infection, Albumin>3.5 g/dL"
TARGET: "edema-free BMI>20 but<30kg/m2"

VII. Assessment of DIABETES:
TARGET: "Without existing diagnosis of diabetes, fasting glucose<126 mg/dL"
TARGET: "With existing diagnosis of diabetes, HbA1c<7%"

VIII. RENAL REPLACEMENT THERAPY
PREPARATION:
TARGETS:
1. Patient educated regarding RRT options with referral to pre-ESRD nurse educator + decision made by patient regarding modality of RRT
2. Continue no blood draws/IV's in non-dominant arm
3. If potential candidate, patient referred for transplant evaluation and patient encouraged to identify possible living transplant donors early
4. If hemodialysis chosen as modality of RRT, vascular access attempted; if failure of maturation 6-8 weeks after harvest, patient referred for angiographic study and/or surgical revision

IX. CKD Education
TARGETS
Counseling during clinic visit on stage specific CKD issues
Kidney Transplant

Dr. Beth Fromkin, Transplant Nephrology

Renal transplant has been an integral part of our nephrology services. Under the leadership of our transplant nephrologist, Dr. Beth Fromkin, our services include comprehensive management of pre and post transplant care.

Our department has developed a unique transplant collaboration with the Nephrology and Transplant teams from CCF in Ohio.

Surgical kidney transplant is not currently performed in Florida. For this reason, patients are initially seen by our staff here where all the pre operative evaluations are performed. After completion of pre transplant evaluation patients are referred to our nephrology and surgical colleagues for their operation in CCF, Ohio. To achieve success a thorough pre-transplant evaluation is conducted jointly by our department and members of the nephrology and surgical team in Ohio.

The number of renal transplants performed at Cleveland Clinic’s main Ohio campus continued to increase from 2000 to 2005, with 161 patients receiving renal allografts in 2005. Because of an ever-growing list of potential recipients on the cadaveric waiting list, the renal transplant team intensified its efforts to find potential live donors for our ESRD population. The number of living donor kidney transplants (i.e., living related and living unrelated) exceeded the number of cadaveric renal transplants. Nationally, live donor renal transplants account for less than one-third of total renal allografts performed annually in the United States. Within the past year, the renal transplant team participated in theDonor Paired Exchange Program in an effort to perform even more kidney transplantations (see Innovations section).
Outpatient Dialysis

Our Department is proud of the quality services we provide in the outpatient dialysis arena. The data you are about to review demonstrates the ability of our staff in providing world-class services to patients in need of outpatient dialysis. **Patients receiving dialysis under our supervision and care at CCF have a lower mortality risk than national average. In fact the risk of mortality faced by our patients may be as much as 57% lower than the national average.**

For several years, our dialysis center has significantly exceeded national averages with regard to patient quality of care, as indicated by both the Clinical Performance Measures Report published in 2005 by the Centers for Medicare and Medicaid Services (CMS), and the March 2007 Fistula First Vascular Access Improvement Initiative.

CMS Clinical Performance Measures are a set of nationally recognized, evidence-based, performance standards that focus on four key areas of quality kidney care: dialysis adequacy (Kt/V), vascular access type, anemia management (blood Hemoglobin), and nutrition (serum albumin).

Studies show that patients who meet all four of the CMS Clinical Performance Measures achieve the lowest mortality. The risk of death increases for every Performance Measure that is not met.
According to the United States Renal Data System (USRDS) 2004 Annual Data Report the national gross mortality rate per year for ESRD patients was 23%. Our center has a mortality rate of only 10%.

With our commitment to consistently following these measures and striving for excellence, our dialysis center exceeds the national averages in an extremely significant way.

<table>
<thead>
<tr>
<th>Performance Indicator</th>
<th>Weston Dialysis</th>
<th>National Average</th>
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<tbody>
<tr>
<td>Dialysis Adequacy (Kt/V &gt; 1.2)</td>
<td>100%</td>
<td>90%</td>
</tr>
<tr>
<td>Patients With Fistula Placed</td>
<td>90%</td>
<td>52%</td>
</tr>
<tr>
<td>Hemoglobin &gt; 11 g/dL</td>
<td>94%</td>
<td>82%</td>
</tr>
<tr>
<td>Albumin &gt; 3.5 g/dL</td>
<td>100%</td>
<td>82%</td>
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</tbody>
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Patients receiving dialysis under our supervision and care at Cleveland Clinic Florida have a lower mortality risk. Risk of mortality faced by patients dialyzed with us may be as much as 57% lower than the national average.

Despite all performance measures, the most important outcome for our patients is mortality rate.
Hypertension

Our nephrology team is organized as a center for investigation and management of patients with problematic hypertension issues. Focus is placed upon refractory hypertension, both primary and secondary in nature. Our hypertension specialists have particular interest in secondary forms of hypertension resulting from renovascular disease, primary aldosteronism and pheochromocytoma as well as renal parenchymal hypertension.

Hypertension control rates to a target blood pressure of less than 140/90 mmHg have been disappointing nationwide. The reason for these poor results is multi-factorial including lack of access to physicians, marginal compliance with medications, poor understanding of the hypertension disease process and others. As a result we at CCF Florida, offer an alternative to the great majority of practices in South Florida that includes:

Open and easy access to our hypertensive specialist clinic

Close follow up with sequential visits until BP has achieved target

Patient education and support groups

Dietary and nutritional services

Ambulatory BP monitoring

Evaluation for secondary hypertension

With a multidisciplinary approach and individualized care we believe CCF Florida is certainly capable to have your BP under control.

Facts and Statistics

High Blood Pressure Facts

Age–adjusted Percent of Adults Aged 20 Years and Older With Hypertension or Taking Blood Pressure–Lowering Medication, 1999–2002

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<thead>
<tr>
<th></th>
<th>Overall:</th>
<th>Women:</th>
<th>Men:</th>
<th>Poverty Status:</th>
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<tr>
<td></td>
<td></td>
<td></td>
<td>All Women</td>
<td>Poor</td>
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<td>White</td>
<td>Near Poor</td>
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<td>30.0%</td>
<td>30.6%</td>
<td>28.5%</td>
<td>33.9%</td>
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<td>43.5%</td>
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<td>27.6%</td>
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<td>40.6%</td>
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<td>26.8%</td>
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Source: Health, United States, 2005.
• Normal blood pressure is a systolic blood pressure of less than 120 mmHg and a diastolic blood pressure of less than 80 mmHg.

• “Prehypertension” is defined as a systolic blood pressure of 120–139 mmHg or a diastolic blood pressure of 80–89 mmHg. Persons with prehypertension are at increased risk to progress to hypertension.

• About 28% of American adults have prehypertension.

It is estimated that the direct and indirect costs of high blood pressure will be $63.5 billion in the year

• High blood pressure (hypertension) was listed as a primary or contributing cause of death for 277,000 Americans in 2002.

• In 2003, there were more than 35 million physician office visits for hypertension.

• High blood pressure is a major risk factor for heart disease, stroke, congestive heart failure, and kidney disease.

• Almost one third of the people with high blood pressure don’t know that they have it.

• It is estimated that about 90% of middle-aged adults will develop high blood pressure in the remainder of their lifetime.

• Blood pressure is often written as two numbers. The top (systolic) number represents the pressure when the heart is beating. The bottom (diastolic) number represents the pressure when the heart is resting between beats.

• High blood pressure for adults is defined as a systolic blood pressure of 140 mmHg or higher, or a diastolic blood pressure of 90 mmHg or higher.
24 hour blood pressure ambulatory monitoring

At CCF we appreciate that when you visit your doctor in the hospital you might feel a little anxious. This can raise your blood pressure and can erroneously suggest that your blood pressure is higher than it actually is when you are in your own environment. We have modern technology try and determine what your blood pressure is like in your own environment. We can ask you to wear a monitor that records your blood pressure for the whole of the 24 hour period. This type of monitoring may help us guide your blood pressure medicine regimen.

The monitor is usually worn on your waistband and is connected to a blood pressure cuff around your left upper arm. The monitor will record your blood pressure every half an hour during the day and every hour at night.

You must remember not to get any part of the equipment wet. When you go to bed you can remove the device from your waistband and leave the cuff on your arm and put the device on your bedside table or beneath the pillow if this is more comfortable for you. The next day you can remove the cuff and monitor and return it back to us for analysis.

Nephrology Fellowship

- Our Nephrology Fellowship Program is a two-year ACGME accredited program. The training program is determined to develop highly competent clinical Nephrologists. Currently we train one Nephrology Fellow per year. This gives the capacity of our fellows to have a very close interaction with the nephrologists and patients within Cleveland Clinic Florida.
During their first year Fellows rotate through Consulting Nephrology Services, Inpatient-Outpatient Dialysis Services and Ambulatory Nephrology. They are also exposed to Renal Pathology and Interventional Procedures. On their second year, fellows rotate in the Transplant Services at the Cleveland Clinic Ohio, electives (like ICU nephrology, Pediatric Nephrology and others) and have 6 months of Nephrology Research experience.

Our fellows also have weekly didactic conferences (Core Curriculum), as well Journal Clubs, Pathology Conferences and M&M’s.

At the end of our Fellowship Program, the residents are ready to sit for the Nephrology Specialty Board Exam, as well as to go into Nephrology practice in the communities.

Innovations
The Department of Nephrology at CCF Florida has developed a comprehensive Interventional Nephrology Service that provides several types of specialized procedures for the needs of our renal patients. The following are the procedures commonly performed by our IN:

- Renal ultrasonography
- Ultrasound guided renal biopsy
- Tunneled hemodialysis catheter insertion
- Peritoneoscopic insertion of PD catheters
- Endovascular procedures

Ultrasonography by the Nephrologist:
The fact that we have US performed by our nephrologists at offers several advantages:

- Safe and effective noninvasive tool
- Delays in the diagnosis and treatments are minimized

Innovations in Nephrology – Interventional Nephrology
Several pathologies can be diagnosed during the first consult utilizing ultrasound including the following examples:

1. simple renal cyst; 2. hydronephrosis; 3. renal cancer; 4. end stage renal disease

At Cleveland clinic of Florida Nephrologists and Cardiologist work hand in hand in trying to treat a serious but reversible cause of hypertension and renal failure called renal artery stenosis. This condition is amenable to a procedure called renal angioplasty and stenting. Dr. Howard Bush, a Cardiologist trained in both coronary and peripheral vascular interventions has a vast experience with this particular procedure having performed over 1100 renal interventions over the past 20 years.

He is fellowship trained both coronary and peripheral vascular interventions. His success rate is over 99% with a low complication rate less than 0.5%. Our team performs all non-invasive pre procedure evaluation of patients including renal Duplex u/s, MRA and CTA. Dr. Bush also has the ability to use the latest in interventional techniques including distal protection, homodynamic measurements, intravascular ultrasound when necessary. A careful follow up of renal function and blood pressure, post procedure is provided by our nephrologists in combination with Dr. Bush’s team.

Renal Artery Stenosis
Renal Pathology

The Department of Nephrology is well recognized for the ability to have diagnosis of kidneys diseases requiring a kidney biopsy. Under the supervision of Dr. Mariana Berho, an expert in Renal Pathology, Cleveland Clinic of Florida is able to provide diagnosis of complex kidneys disease including glomerular, tubulointerstitial, vascular medical renal diseases and kidney transplant pathology. Kidney tissue testing and diagnoses are provided quickly, usually within 24 hours after the biopsy, based on histology and immunohistology. Renal Pathology is a highly specialized field available only at tertiary health care Centers. At Cleveland Clinic Florida, we provide high quality renal pathologists with competent technical support and specialized methodologies including light microscopy (LM), immunofluorescence (IF).
Provider Excellence

Providers Explanation (N=162)

- Excellent/Very Good: 87%
- Good/Fair: 12%
- Poor: 1%

Dr. Spent Enough Time (N=122)

- Yes Definitely: 85%
- Yes Somewhat: 12%
- No Definitely Not: 2%

Involves in Decisions (N=160)

- Excellent/Very Good: 82%
- Good/Fair: 14%
- Poor: 4%

Know as a Person (N=155)

- Excellent/Very Good: 73%
- Good/Fair: 26%
- Poor: 1%