GO PUBLIC!

SANTA CLARA VALLEY MEDICAL CENTER
Hospital & Clinics

Valley Specialty Center
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Nephrology Referral Guidelines

Nephrology Clinic Location:	Renal Care Center 2220 Moorpark San Jose, CA 95128
Nephrology Clinic Patient Phone: **For New Patients:**	(408) 885-4845 (408) 885-3842
Nephrology Clinic Fax:	(408) 885-5828

Doctors Call via AMION Outpatient Attending for Urgent referral or consult

This information is designed to aid practitioners in making decisions about appropriate medical care. These guidelines should not be construed as dictating an exclusive course of treatment. Variations in practice may be warranted based on the needs of the individual patient, resources, and limitations unique to the institutional type of practice.

E-CONSULT DISCLAIMER:

E-consults are based on the clinical data available to the reviewing provider, and are furnished without benefit of a comprehensive evaluation or physical examination. All advice and recommendations must be interpreted in light of any clinical issues, or changes in patient status, not available to the reviewing provider. The ongoing management of clinical problems addressed by the e-consult is the responsibility of the referring provider. If you have further questions or would like clarifications regarding e-consult advice, please contact the reviewing provider. If needed, the patient will be scheduled for an in-office consultation.

All URGENT consultations require provider-to-provider communication. If your patient has a medical emergency, please direct them to the closest emergency room for expedited care.

Table of Contents

ABBREVIATIONS/TERMINOLOGY

ARB – Angiotensin Receptor Blockade
ACEi – Angiotensin Converting Enzyme inhibitor
e-GFR – Estimated Glomerular Filtration Rate in units ml/min/1.73m2
UACR – Urine Albumin to Creatinine Ratio
UPCR – Urine Protein to Creatinine Ratio

APPROPRIATE ROUTINE REFERRALS TO NEPHROLOGY CLINIC

CHRONIC KIDNEY DISEASE

1. **Background**
    a. eGFR is a functional measurement and can vary in the same patient without signifying damage to the kidney
    b. For patients with GFR calculated between 46 to 60
        i. Have patient increase fluid intake (if appropriate)
        ii. Assess if any new medications started that can alter GFR
            1. ACEi, ARB, diuretics, triamterene, trimethoprim (Bactrim), NSAIDS
        iii. Review previous labs for baseline history
        iv. Monitor GFR over 3-6 months
        v. Check UPCR follow recommendations according to UPCR
        vi. Check for hematuria and follow recommendations according to presence of hematuria
    c. Please follow recommendations below before referring patient with GFR of 45 or less.
    d. Most patient with GFR above 45 without diabetes can be followed by primary care doctor unless patient has rapid decrease in GFR or proteinuria UPCR > 0.5
    e. Diabetic patients with GFR above 45 can be followed by primary care doctor if UPCR l>0.5. Please follow all the recommendations below including use of SGLT2 inhibitor unless contraindicated.
    f. Elderly patients with atherosclerosis often have renovascular disease with decreased GFR and UPCR <0.5. These patients can be followed by primary care doctor if blood pressure can be controlled >131/81 and UPCR < 0.5. Control of atherosclerotic risk factors should be followed.

g. Patients with heart failure and cardiorenal syndrome, can be followed in heart failure clinic, as heart disease is driving the syndrome.
h. Consider using kidneyfailurerisk.com to evaluate risk of progression to end stage kidney disease or need for nephrology referral

2. Pre-referral evaluation and treatment
    a. Check RCA nephrotic panel which includes CBC with differential, P7, Calcium, Phosphorus, Magnesium, Albumin, Cholesterol, ALT, Uric Acid, Urine Creatinine, Urine Protein, Protein/Creatinine ratio, UA
    b. Optimize hypertension control (goal < 130/80)
    c. Optimize diabetes control (HgbA1c goal < 7)
    d. If evidence of proteinuria, start ACEI or ARB if clinically appropriate (no hyperkalemia and BP can tolerate)
    e. Treat hyperlipidemia and atherosclerotic risk factors
    f. Start SGLT2 inhibitor in diabetic patients with UPCR over 0.5 without contraindications.
    g. Evaluate anatomy with renal ultrasound or CT if none done

3. Referral
    a. Patient with GFR 46 – 60 ml/min
        i. Follow above recommendations
        ii. Refer if UPCR > 0.5
        iii. Refer if unable to control blood pressure with 3 agents including diuretic
        iv. Refer if creatinine continues to decrease over 3–6 month monitoring period
        v. Refer patient with decreasing GFR with 3 measurements decrease more than 5 ml/min / year/

    b. Estimated GFR < 45 ml/min
        i. Review if patient has been seen by nephrology and follow recommendations if so. May not need regular nephrology appointments if not progressing
        ii. If less than 45 ml/min and never seen by nephrologist refer to renal clinic
        iii. If GFR less than 15 ml/min or symptoms of uremia, contact outpatient attending for expedited appointment. Contact outpatient attending on AMION through operator or secure chat

CONGENITAL KIDNEY DISEASE

1. **Background**
    a. Patient suspect for polycystic kidney disease

2. **Pre-referral evaluation and treatment**
    a. Check RCA nephrotic panel which includes CBC with differential, P7, Calcium, Phosphorus, Magnesium, Albumin, Cholesterol, ALT, Uric Acid, Urine Creatinine, Urine Protein, Protein/Creatinine ratio, UA, renal ultrasound

3. **Indications for referral**
    a. Place routine referral

ELECTROLYTE ABNORMALITY

1. **Background**
    a. Sustained electrolyte abnormality demonstrated on labs as below
    b. Hyperkalemia – can be managed by primary care provider by
        i. For K over 5.5 give Sodium polystyrene daily until K in normal range- contact outpatient attending if PCP not familiar with potassium lowering therapy.
        ii. Initial management should be provided by PCP.
        iii. Stopping K related medications including
            1. ACE inhibitors and ARBs
            2. Spironolactone, eplerenone, finerenone (Mineralocorticoid receptor antagonists)
            3. Triamterene, trimethoprim (Bactrim)
            4. NSAIDs
            5. Entresto
        iv. Recheck Potassium after these changes
        v. Diabetic patients with hyperkalemia often have aldosterone resistance (also called Type 4 RTA)
            1. Start diuretic such as HCTZ or furosemide, regardless of presence of edema unless contraindication
            2. Start Na HCO3 unless serum HCO3 over 27 or contraindication
            3. Check Potassium after these changes
    c. Hyponatremia serum Sodium less than 130
        i. Stop hydrochlorothiazide, chlorthalidone
        ii. Check urine osm with serum osm
        iii. If urine osm over 500, more likely to have SIADH, proceed with renal referral

iv. If urine osm close to serum osm, have patient increase solute intake such as protein and decrease water consumption and monitor Serum Na. If persistently less than 128 refer. Asymptomatic patients with serum sodium above 128 can be monitored

2. **Pre-referral evaluation and treatment**
    a. Check RCA nephrotic panel which includes CBC with differential, P7, Calcium, Phosphorus, Magnesium, Albumin, Cholesterol, ALT, Uric Acid, Urine Creatinine, Urine Protein, Protein/Creatinine ratio, UA
    b. If referral for hyponatremia, check urine osmolality, serum osmolality, urine sodium, urine creatinine
    c. Ensure patient is off all possible offending agents (such as hyperkalemic patient off ACEi, ARB or NSAIDS, hyponatremia patient off loop diuretic)

3. **Indications for referral**
    a. Sustained hypokalemia K < 3.3 off any medications such as diuretics that can affect K
    b. Hyponatremia
        i. serum Na < 128 after above management
        ii. Urine osm over 500 in euvolemic patient.
    c. Hyperkalemia after management above
        - Acute management of hyperkalemia should be provided by PCP (do not send an urgent referral for initial therapy)
        - Persistent hyperkalemia with management above (K over 5.3)

HEMATURIA (if suspected systemic disease - vasculitis / lupus, see below)

1. **Background**
2. **Pre-referral evaluation and treatment**
    a. Check RCA nephrotic panel which includes CBC with differential, P7, Calcium, Phosphorus, Magnesium, Albumin, Cholesterol, ALT, Uric Acid, Urine Creatinine, Urine Protein, Protein/Creatinine ratio, UA
    b. Hematuria with UPCR $\geq$ 0.5 or dysmorphic red cells or red cell casts.
        i. If decreasing GFR or suspect systemic disease associated with glomerulonephritis such as lupus, vasculitis then contact outpatient attending on AMION through operator or secure chat

c. Hematuria without proteinuria and GFR $\geq$ 60
    i. Refer to urology for work-up
    ii. No indication for nephrology evaluation

3. **Indications for referral**
    a. Proceed with routine referral unless specific criteria met above

KIDNEY TRANSPLANT PATIENTS

1. **Background**
2. **Pre-referral evaluation and treatment**
    a. Check RCA nephrotic panel which includes CBC with differential, P7, Calcium, Phosphorus, Magnesium, Albumin, Cholesterol, ALT, Uric Acid, Urine Creatinine, Urine Protein, Protein/Creatinine ratio, UA

3. **Indications for referral**
    a. First year after transplant patient should be followed in their transplant center
    b. Transplanted patient should return to their initial nephrologist after 1st year if appropriate per transplant center. If patient was followed by **current VMC nephrologist**, we will resume care post-transplant when transplant center releases them.
    c. Patient who received transplant outside of local area and cannot return for follow up, can be referred for follow up.

PROTEINURIA (if pregnant, see below)

1. **Background**
    a. Diabetic nephropathy is the most common cause of proteinuria in our clinic. Please follow recommendations below for diabetic patients.
    b. Primary renal diseases that cause nephrotic syndrome may require nephrology management. Patient with urine protein to creatinine ratio over 2.5 without diabetes should be referred to renal clinic. If patient has albuminemia, serum albumin less than 3, please notify outpatient attending by phone or secure chat for expedited appointment
2. **Pre-referral evaluation and treatment**
    a. Quantify proteinuria by checking urine protein to creatinine ratio (UPCR)

b. Check RCA nephrotic panel which includes CBC with differential, P7, Calcium, Phosphorus, Magnesium, Albumin, Cholesterol, ALT, Uric Acid, UA
c. Diabetic patients with proteinuria less than 1 gram can be followed by primary care provider with these recommendations:
    i. Control blood pressure with any medications including diuretic to 130/80 or less, often 3 medications will be needed, Calcium channel blocker, beta blocker and diuretic
    ii. Start ACEi or ARB if cough and titrate up to maximum dose as tolerated and no contraindications. (expect 20% increase in creatinine)
    iii. Start SGLT 2 inhibitor, if no contraindications. (expect 20% increase in creatinine)
    iv. If UPCR does not decrease, then refer to renal clinic

3. Indications for referral

a. Proteinuria UPCR > 1 with GFR over 59 ml/min in patient with diabetes who failed above recommendation
b. Proteinuria UPCR >0.5 in patient without diabetes.
c. Proteinuria UPCR > 2.5, serum albumin < 3, likely primary nephrotic syndrome, notify outpatient attending for expedited appointment

REFRACTORY HYPERTENSION

1. Background

a. Refractory hypertension taking 4 antihypertensive medications OR if secondary hypertension is suspected

2. Pre-referral evaluation and treatment

a. Check RCA nephrotic panel which includes CBC with differential, P7, Calcium, Phosphorus, Magnesium, Albumin, Cholesterol, ALT, Uric Acid, Urine Creatinine, Urine Protein, Protein/Creatinine ratio, UA
b. Provide low sodium dietary education
c. Ensure right size blood pressure cuff and blood pressure machine is functional
d. Advise patient to check blood pressure at home after emptying their bladder, sitting and relaxing for 3-5 minutes with both feet flat on the ground.
e. Add diuretic if none prescribe regardless of whether edema present if no contraindication

f. Perform a pill count and in person medication review by physician to evaluate if patient taking medications as prescribed and confirm adherence to medications.
g. Patients who discontinue multiple medications due to varying side effects without do not have refractory hypertension and should not be referred.

3. **Indications for referral**
    a. Proceed with routine referral
    b. Patient must bring medications bottles to appointment
    c. Instruct patient to bring ambulatory blood pressure readings to nephrology consultation appointment.

APPROPRIATE REFERRALS WITH OUTPATIENT PHYSICIAN CONTACT REQUIRED

ACUTE KIDNEY INJURY

1. **Background**
    a. A sudden and sustained drop in eGFR of 30% below patient's baseline.

2. **Pre-referral evaluation and treatment**
    a. Check RCA nephrotic panel which includes CBC with differential, P7, Calcium, Phosphorus, Magnesium, Albumin, Cholesterol, ALT, Uric Acid, Urine Creatinine, Urine Protein, Protein/Creatinine ratio, UA
    b. If a patient has a drop in GFR after starting a new medication, follow the creatinine over a few weeks. Medications where an increase in creatinine is expected are:
        i. ACE inhibitors and ARBs- 20-30 % drop in GFR- just monitor for at least a month to see if creatinine stabilized
        ii. SGLT2 inhibitors -20-30 % drop in GFR- just monitor for at least a month to see if creatinine stabilized
        iii. NSAIDs- stop medication unless absolutely indicated
        iv. Ernesto
        v. Diuretics
        vi. Bactrim(trimethoprim), triamterene

3. **Indications for referral**
    a. If patient has decreased urine output or symptoms of renal failure

        i. Refer for inpatient evaluation and management
    b. If patient has acute drop in eGFR with hematuria and proteinuria UPCR > 0.5
        i. Please call outpatient attending to discuss as this may be acute glomerulonephritis. Contact outpatient attending on AMION through operator or secure chat

PROTEINURIA AND PREGNANCY

1. **Background**
2. **Pre-referral evaluation and treatment**
    a. Check RCA nephrotic panel which includes CBC with differential, P7, Calcium, Phosphorus, Magnesium, Albumin, Cholesterol, ALT, Uric Acid, Urine Creatinine, Urine Protein, Protein/Creatinine ratio, UA

3. **Indications for referral**
    a. Pregnant women with proteinuria over 0.5 grams in first trimester or GFR less than 60 should be referred and outpatient attending notified. Contact outpatient attending on AMION through operator or secure chat

INAPPROPRIATE REFERRALS TO NEPHROLOGY CLINIC

DIALYSIS PATIENT WITH OUTSIDE NEPHROLOGIST

1. If patient requests to change nephrologists, they can work with their dialysis center social worker to transfer to another community nephrologist.

RADIOLOGY READ: “SIMPLE CYST” and BACK PAIN

1. If radiologist reading is “simple cyst”, no further investigation is required. This is not the cause of back pain.

RECURRENT URINARY TRACT INFECTION OR DYSURIA

1. Management by PCP

UNCONTROLLED HYPERTENSION IN NONADHERENT PATIENT

1. Management by PCP

REFERRALS TO BE DIRECTED TO ANOTHER CLINIC

HEMATURIA RBC>20/HPF WITHOUT URINE PROTEINURIA – SCVMC Urology Clinic

1. Hematuria RBC > 20/HPF without urine proteinuria (less than UPCR 0.5) should be evaluated by Urology criteria

KIDNEY/BLADDER STONES, NEPHROCALCINOSIS, NEPHROLITHIASIS – SCVMC Urology Clinic

1. Nephrolithiasis, nephrocalcinosis, kidney or bladder stones should be referred to Urology at SCVMC. Urology manages both metabolic and surgical stone disease

RADIOLOGY READ: ABNORMALITIES OF BLADDER/KIDNEY/URETERS, CALIECTASIS, COMPLEX RENAL CYST, HYDRONEPHROSIS, RENAL MASS – SCVMC Urology Clinic

1. Complex renal cyst, renal mass, hydronephrosis, caliectasis, abnormalities of kidney, ureters and bladder on imaging should be referred per Urology guidelines.

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- May 2017, formatting, content
- Oct 2017, formatting
- May 2022, major content revision