APPENDIX 1. MANAGEMENT OF PROGRESSIVE CHRONIC RENAL FAILURE

At-risk Populations
- Diabetes
- Hypertension
- Cardiovascular disease
- Family history of renal disease
- Abnormal urinalysis
- Unexplained anemia

Does the patient have diabetes?

Screen every year for proteinuria and microalbuminuria (ACR)

Positive

Screen with **eGFR**
(many labs automatically provide estimated GFR whenever serum creatinine is ordered; otherwise, calculate creatinine clearance/GFR)

See *Appendix 2*
To facilitate use of eGFR in practice, free on-line calculators available at:
www.nephron.com
www.diabetes.ca/cpg2003
www.kidney.org/professionals/kdoqi/gfr_calculator.cfm

If serum creatinine and/or eGFR abnormal

Do a Complete History & Work-up:
- Urinalysis (including microscopy) for protein and blood [see Appendix 3]
- Quantitative proteinuria: random urine ACR
- CBC
- Electrolytes, urea, calcium
- Phosphate, albumin
- Total serum protein/electrophoresis
- Ultrasound: size, symmetry, echogenicity
- BP, smoking, lipid levels

To Identify:
Cause—glomerular or non-glomerular
Reversibility
Comorbid conditions
Risk and extent of disease progression*
* To determine if stable or progressive disease, measure serum creatinine on several occasions, at least 2–4 weeks apart

Glomerular or Non-glomerular Origin?
- If proteinuria >2.0 gm/24hrs **or** RBC casts, consider as glomerular
- If hematuria (esp dysmorphic RBCs), possible glomerular.
- If no proteinuria or < 2.0 gm/24 hrs, tests/consultation to exclude:
  - o anatomical abnormality (with renal ultrasound)
  - o tubulo-interstitial or overflow cause

  If all tests negative, assume glomerular.
- If glomerular, and do limited immune work-up (ANA ,C3, C4). If immune work-up negative, start treatment and monitor regularly (Q3-6 months)

Inititate strategies to slow disease progression. (BP to <130/80, ACEI, avoid nephrotoxins, etc)
Prevent and/or treat cardiovascular disease
Prevent and/or treat symptoms and complications of kidney disease
Establish regular monitoring schedule

Referral required if progressive rising creatinine established.
Urgent referral: If serum creatinine is rapidly increasing (20-30% increase over 1-30 days–a 3rd reading is needed for confirmation)
Emergency referral: If systemic symptoms or severe homeostatic derangement

Adapted from: Curtis B, Barrett BJ, Levin A. Identifying and slowing progressive chronic renal failure. Can Fam Physician 2001; 47:2512-2518; Manitoba Renal Program. Renal Management Guidelines <www.manitobarenalprogram.ca/downloads/MRP%20Guidelines.pdf> ; Identification, Evaluation and Management of Patients with Chronic Kidney Disease. < www.health.gov.bc.ca/msp/protoguides/gps/ckd.pdf>

© The Foundation for Medical Practice Education, www.fmpe.org
August 2006