Please Read This First

- The protocols represent ever changing state of the art knowledge and practice of Renal Remission and thus at no time are either finished or a perfect product.
- These protocols are believed to be accurate and up to date as of the day of the issue.
- Please visit www.renalremission.com to obtain the latest version or to leave your comments, correction or to ask questions.
- The protocols are an open source concept; feedback and contribution from users are continuously evaluated and incorporated into the protocols.
- Please sign up to a mailing list to be notified of the protocol change.
Renal Remission is a highly specialized area of Nephrology requiring knowledge and practical skills not adequately taught in a typical US-based Nephrology Fellowship Program.

Implementation of the protocols should only be done under supervision of a qualified professional familiar with the concept and capable of managing high risk patients with this aggressive multi-modality regimen, which carries substantial risks unless implemented properly.
Medications, doses and manner in which they are used in the protocols are consistent with those used in the positive studies found in the peer-reviewed journals. They may or may not be consistent with manufacturers package inserts and may or may not be used for “off label” indications.

Always refer to and prescribe medications in accordance with manufacturers package insert and FDA (in US) or your country approved indications.
Goals of Renal Remission Clinic

- Prevent death
- Prevent disabling Cardiovascular events
- Stop progression and when possible achieve regression of renal disease and renal failure
Patient selection for Renal Remission
- Urine Albumin/Creatinine >2 g/g untreated
- Treated with ACEI/ARB/NDHPCCB/statins/Carvedilol with Alb/Cr >1 g/g
- GFR >15 ml/min/1.73 m²
- Ability to comply with medications and willingness to institute at least some dietary and lifestyle changes
Renal Remission Algorithms -2

- **Initial Evaluation:**
  - Lytes, BUN, Cr, Ca, P, Albumin, H&H, urine Pr/Cr or Alb/Cr
  - intact PTH, Vitamin D panel
  - Plasma Free Light Chain Assay if older then 50
  - Additional serologic workup as indicated by clinical picture
  - Advanced Lipid/ Cardiovascular Risk Factor Panel
Algorithm of the multidrug approach to patients with chronic nephropathy and persistent nephrotic-range proteinuria (remission clinic)

In all patients hyperkalemia was limited by dietary prescription, diuretic therapy, and optimal treatment of metabolic acidosis and hyperglycaemia (in diabetics).

- Updated Ruggenenti protocol, modified.
  - K+ > 5.0 patients undergo aggressive nutritional counseling
  - K+ repeated x 2, if < 5.0 both times ACEI/ARB added
  - Proteinuria and BP measured before and after NDHPCCB; CCB discontinued if ΔPr/Cr < 20% or ΔSBP < 7 mm/Hg

Vasin (2006)
- Verapamil/Diltiazem (if trial is effective)
- Allopurinol

Ruggenenti, Lancet 2001; 357: 1601-08
7. For patients with spot urine total protein-to-creatinine ratio >500-1,000mg/g
   - Consider a lower systolic BP goal
   - Consider measures to reduce proteinuria
     - Increase dose of ACEI or ARB
     - Use ACEI and ARB in combination
     - Add or increase dosages of other agents that lower proteinuria
Renal Remission Algorithms -4

- Goals:
  - Albuminuria <300 mg/g
  - LDL <50 and HDL>LDL (in Pt with CV disease)
  - Triglycerides <100
  - Phosphorus < 4.5
  - Ca < 9.5
  - iPTH appropriate for CKD stage
  - 25OHD3 level >60
  - Hb 11-12
  - CO₂ level >24
  - BNP 50-70 (30-50 if BMI <35)
  - NT-proBNP decreasing over time (even if not elevated at baseline)

- Weight loss at least 10% of pre-treatment in overweight/obese
- DASH – like diet
- Smoking cessation
- Euglycemia
- Exercise program
- “Background meds”
  - ASA 81 mg
  - NaHCO₃ 1,250 mg BID for Pts with GFR<30 regardless of CO₂ level
  - OM3FA 1+ gram
Patients with established vascular disease (CAD, CVA, PVD, RAS)

- Target LDL <60, HDL>LDL, Triglycerides <100, Lp(a) <10 (VAP) or <30 (non-VAP)
- CIMT (Carotid Intima to Media Thickness) at baseline and repeat after 12 months; target regression of CIMT
- Target ACR <5 mg/g
MOST of the patients in RRC will develop hyperkalemia unless aggressive PROACTIVE measures are instituted.

- Proactive dietary changes are discussed on the first visit to RRC, patients commitment to institute dietary changes is a prerequisite to enrolment in RRC protocol.

- "BLACK LIST" is to be memorized by the patient and rehearsed at each visit (OJ, Milk, oranges, bananas, tomatoes, potatoes, other ethnic high K+ foods).

- Dietary counseling stepped up if K+ > 5.
Renal Remission Algorithm -7

Hyperkalemia Management-2

- MOST of the patients in RRC will develop hyperkalemia unless aggressive PROACTIVE measures are instituted

- No increase or addition of ACEI/ARB/AA/DRI is done unless K+ is consistently <5.0
  - Discontinue one of the ACEI/ARB/AA/DRI if K+ >5.5
  - Discontinue all ACEI/ARB/AA/DRI if K+ >6.0
  - Reintroduce ACE/ARB/AA/DRI per above, after aggressive provider AND formal registered dietician counseling
  - Trial of DRI Aliskiren 150-300 mg q.d. IF reintroduction of ACEI/ARB/AA caused hyperkalemia and K+ <5.5

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The Choice is Yours
Death by Dialysis
OR
Renal Remission
And
Cardiovascular Protection
“Try not. Do or Do Not. There is No Try”

Master Yoda
Questions?
Need help with protocols?
Have a suggestion/contribution to protocols?

- www.renalremission.com
- drvasin@renalremission.com