AtheroRegression Clinic (ARC) Protocols

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ARC Goals of Therapy

- Targets are intentionally simplified and reduced to a bare minimum to keep patients and providers on the same page
- Additional targets can be introduced after initial targets are achieved
- Achievement of the main targets will usually require multimodal interventions resulting in achievement of additional targets as well as improvement and/or control of other traditional and non-traditional risk factors

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Patient Selection

- Patient with established cardiovascular disease
- Patient at high risk for CV disease either by Framingham criteria (over 10% ten years mortality)
- Significant (determined individually) number of non-Framingham Risk Factors or very strong Family History
- CIMT >1.3 mm or any soft plaque

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ARC Initial Evaluation

- APO-E genotype (diet counseling)
- Advanced Lipid Panel (Berkeley Heart Labs or VAP)
- CIMT
- Microalbumin to creatinine ratio (ACR)
- HbA1c
- LPPLA-2
- Aspirin resistance check

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ARC Targets

- Main Targets
  - Lipids: LDL<70, HDL>LDL
  - HTN: SBP <125, ACEI for everyone regardless of BP
  - DM II: HbA_1c <7.5
  - CIMT regression
- Additional Targets
  - ACR <10
  - Triglycerides <150

ACR – Albumin to creatinine ratio random urine, mg/g

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ARC Targets-1 Lipids

LDL <70, HDL >LDL

- Medications:
- First line (everyone on unless not tolerated)
  - Statin, for virtually everyone, in order of preference: Atorva (80 mg), Simva (40 mg) and Prava (40 mg) dosed q. HS
  - Niacin 1,000+ mg with ASA 81+ mg for most with established CVD, dosed q. HS (Niaspan) or BID after meals (Slo-Niacin)
  - Omega-3 FA (Lovaza or Coromega) 1 g for most, up to 4 g for Pt with triglycerides >150 (additional target)
- Second line
  - Cholesevelam up to 3.75 g for diabetics with LDL above target or Pt with suspicion for bile-acid associated diarrhea
  - Fenofibrate for diabetics or metabolic syndrome patents not at goal

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ARC Targets-2: Antihypertensive Therapy

for Non-Diabetic with ACR<300 or Diabetic with ACR<30 mg/g

ACEI for everyone, SBP <125

- ACEI maximal dose, preferred Ramipril 10-20 mg q. hs or Perindopril 8 mg q. hs
- Amlodipine up to 10 mg q.d. or ACEI-combo
- Eplerenone 25-50 mg q.d. or Spironolactone 12.5-25 mg q.d.
- Carvedilol, 20+mg CR q. HS preferred, or IR 6.25+ mg b.i.d., Nebivolol 5+mg q. hs is acceptable, but not other BB
- Thiazide diuretic: Indapamide 1.25-2.5 mg q.d. Chlorthalidone 12.5-25 mg q.d. acceptable, but NOT HCTZ or HCTZ combos
- See Difficult to Control HTN Protocol if BP is still uncontrolled

ACR – Albumin to creatinine ratio random urine, mg/g

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ARC Targets-3: Antihypertensive Therapy

for Non-Diabetic with ACR 300-1,000 or Diabetic with ACR 30-300

ACEI for everyone, SBP <125

- ACEI maximal dose, preferred Ramipril 10-20 mg q. hs or Perindopril 8 mg q. hs
- Eplerenone 25-50 mg q.d. or Spironolactone 12.5-25 mg q.d.
- ARB maximal dose, preferred Olmesartan 40 mg q. hs, or Telmisartan 80 mg q. hs
- Carvedilol, 20+mg CR q. HS preferred, or IR 6.25+ mg b.i.d., Nebivolol 5+mg q. hs is acceptable, but no other BB
- Amlodipine up to 10 mg q.d. or ACEI-combo
- Thiazide diuretic: Indapamide 1.25-2.5 mg q.d. Chlorthalidone 12.5-25 mg q.d. acceptable, but NOT HCTZ or HCTZ combos
- See Difficult to Control HTN Protocol if BP is still uncontrolled

ACR – Albumin to creatinine ratio random urine, mg/g

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ARC Targets-4: Antihypertensive Therapy

for Non-Diabetic Nephropathy with ACR >1,000 or Diabetic Nephropathy with ACR >300

ACEI for everyone, SBP <125

- Patients with DM and non-DM nephropathy AND vascular disease are at EXTREMELY high CV risk and are EXTREMELY challenging to manage, yet they are likely to obtain the most benefit
- Refer to Renal Remission Clinic Protocols for HTN management and hyperkalemia prevention and management

ACR – Albumin to creatinine ratio random urine, mg/g

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ARC Targets-5
CIMT regression

- CIMT measurement in one year is expected to show regression of the CIMT; further follow up CIMT is optional
- Stabilization of CIMT is acceptable if all other targets of therapy, including additional ones are achieved; another 1 year CIMT check is strongly recommended
- Progression or stabilization of CIMT with unachieved targets should prompt review of compliance, medical therapy and put more emphasis on non-pharmacologic therapy

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Special Cases-1:
Previous Stroke(s), Strong Family Hx of Strokes

- Recent event (<1 week) – see Stroke Clinic Protocol
- Distant event or high risk/concern*
  - ACEI for everyone
  - Atorvastatin 80 mg q. hs
  - ASA 81+ q.hs
  - ARB max dose q. hs
  - Thiazide
  - Amlodipine

* See previous slides for preferred agents in the "class"

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“Try not. Do or Do Not. There is No Try”

Master Yoda

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Last Word

- We will make every attempt to keep this and other protocols current and reflecting state-of-the-art in the field; still *please perform reality and common sense check before applying any of the recommendations to individual patients*
- This is an open source concept and your comments and suggestions are welcome; we will evaluate them in our practice and include in the protocols with a credit to the author
- Contact us at: *drvasin@renalremission.com*

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