Discussant: ISCHEMIA-CKD

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Relationships with Industry (RWI) or Conflicts of Interest (COI): None
(Interventional Cardiologist by Training)

AHA Scientific Sessions 2019
### Revascularization to Improve Survival: MV CAD

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<th>Anatomy</th>
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<td>2 VD Without Proximal LAD Disease</td>
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- “In the 1970s and 1980s, 3 RCTs established the survival benefit of CABG compared with contemporaneous (although minimal by current standards) medical therapy without revascularization in certain subjects with stable angina.”
- Only “contemporary” randomized trial BARI 2D in diabetic patients treated with BMS or 1st generation DES.
- “No study to date has demonstrated that PCI in patients with SIHD improves survival rates” (best data from COURAGE).

Levine GN et al. Circulation 2011 (PCI); Hills LD et al. Circulation 2011 (CABG); Fihn SD et al. Circulation 2012 (SIHD)

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Help to fill these large knowledge gaps

- Study PIs and study leadership
- ISCHEMIA and ISCHEMIA-CKD investigators
- Patients who volunteered to participate
- NHLBI
ISCHEMIA-CKD Study Caveats

• As acknowledged by the study investigators, we need to remind ourselves that these results do not apply to patients with:
  • ACS
  • Unacceptable angina despite maximal medical therapy
  • Significant heart failure

• It seems unlikely that all centers routinely do and will exactly follow the very careful measures to limit contrast and minimize contrast nephropathy used in this study

• Only:
  • ½ (51%) of patients had multivessel CAD (which was defined as ≥ 50% stenosis)
  • 80% of the invasive arm underwent angiography
  • ½ of patients in the invasive arm underwent revascularization
That Said.....

• This was as well designed and executed a trial as one can practically do

• The study was able to enroll, consent, and randomize 777 patients with severe or end-stage CKD into a trial involving angiography, PCI and CABG, then follow them 2-4 years with essentially no loss of f/u data -- a monumental achievement

• Well-powered trial
  • >80% power to detect 22% to 24% relative reduction
  • based on estimated 4 year event rate 41-48% (actual ≈47%)

• Cross-over rates for conservative to invasive therapy was modest (≈20% for angiography and ≈12% for revascularization)

• The study results are generally internally consistent
My Take Home Thoughts

- Patients with severe CKD are a challenging group to treat and improve prognosis
  - It is difficult (even in a well-done study) to consistently achieve a “high level of medical therapy optimization”
  - There is a ≈37% 4-year mortality irrespective of how we manage their CAD

- Even when we go searching for significant CAD in these patients, only ≈1/2 will undergo revascularization

- Angiography and coronary revascularization as a general treatment strategy in patients with severe or end-stage CKD with moderate to severe ischemic on stress testing, who do not have ACS or an unacceptable level of angina:
  - does not seem to decrease death or ischemic events
  - does not seem to improve QOL parameters
  - seems numerically at least to increase the early need for dialysis
  - might (for some non procedure-related reason) increase stroke
My Take Home Thoughts

• I would think (without any inside knowledge) ISCHEMIA and ISCHEMIA-CKD will be key studies that are incorporated into AHA/ACC revascularization guidelines.

• Based on the results of ISCHEMIA-CKD, I will generally not go “searching” for ischemia and CAD in most severe and end-stage CKD patients, absent marked or unacceptable angina, and will treat them with medical therapy alone.