SECONDARY PREVENTION AFTER CORONARY ARTERY BYPASS GRAFT SURGERY

CULLEN D. MORRIS, M.D., F.A.C.S.
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DISCLOSURES:

- I have nothing to disclose
THE PROBLEM

Annual Number of Deaths by Cause (World, 2016)

- Cardiovascular diseases: 17.65
- Cancers: 8.93
- Respiratory disease: 3.54
- Diabetes, blood and endocrine disease: 3.19
- Dementia: 2.33
- Lower respiratory infections: 2.33
- Neonatal deaths: 1.73
- Diarrhoeal diseases: 1.66
- Road incidents: 1.34
- Liver disease: 1.26
- Tuberculosis: 1.21
- Kidney disease: 1.19
- Digestive disease: 1.09
- HIV/AIDS: 1.03
- Suicide: 0.81
- Malaria: 0.71
- Homicide: 0.39
- Nutritional deficiencies: 0.37
- Meningitis: 0.32
- Protein-energy malnutrition: 0.31
- Drowning: 0.23
- Maternal deaths: 0.21
- Parkinson’s disease: 0.17
- Alcohol disorder: 0.16
- Intestinal infectious diseases: 0.14
- Drug disorder: 0.13
- Hepatitis: 0.13
- Fire: 0.13
- Conflict: 0.12
- Heat-related deaths (hot or cold): 0.06
- Terrorism: 0.03
- Natural disasters: 0.01
THE PROBLEM

- 13 million in U.S. with cashd
- 400,000 CABGs in U.S. yearly
- CABG
  - Most complete and durable treatment for ischemic heart disease
  - Palliative only
PURPOSE

- Emphasize essential secondary prevention
- Components of secondary prevention
SECONDARY PREVENTION IS BETTER AFTER PCI, WHY?

Medications after CABG or PCI

- Statin
- Clopidogrel

- CABG
- PCI

Hlatky, JACC 2013 Vol 61;3.
TOPICS

- ANTI-PLATELET AGENTS
- STATINS AND LIPID LOWERING THERAPY
- POST-OPERATIVE HTN AND DM MGMT
- SMOKING CESSATION
- WEIGHT LOSS AND EXERCISE, CR
ANTI-PLATELET AGENTS

- ASPIRIN
ANTI-PLATELET AGENTS

- ASPIRIN
  - Give w/in **SIX HOURS** after CABG
  - Lifetime of the patient
  - 81 – **325** mg daily
ANTI-PLATELET AGENTS: P2Y12 RECEPTOR INHIBITORS

- Clopidogrel (Plavix)
  - Add to 81 mg ASA in OPCAB
  - Add to 81 mg ASA if ACS
  - Not recommended as solo
ANTI-PLATELET AGENTS: P2Y12 RECEPTOR INHIBITORS

- PRASUGREL (effient)
- TICAGRELOR (brilinta)
  - Some promising work with 81 mg ASA
ANTI-PLATELET AGENTS: SUMMARY

- ASPIRIN LIFELONG 162 - 325 MG DAILY
- OPCAB: 81 - 162 MG + 75 MG Clopidogrel daily for one year, then ASA only
- Acute coronary presentation: 75 mg Clopidogrel + ASA
POST-OPERATIVE LIPID THERAPY

- “High intensity” encouraged
  - Atorvastatin 80mg or Rosuvastatin 20 – 40 mg daily
- Can’t take statin?
  - Ezetimibe 10 mg daily
POST-OPERATIVE LIPID THERAPY

- Goal of LDL < 100
- Statins also improve endothelial function
- Statins underused after CABG
- Should be continued lifelong
- What about HDL?

Post CABG trial NEJM 1997
IMPROVE-IT trial
ACTIVE trial
POST-OPERATIVE LIPID THERAPY

- Exercise
- Smoking cessation
- Weight loss
- Moderate ETOH intake
- Fibrates, Niacin
  - Little data, adding gemfib to statin = increased side effects
POST-OPERATIVE LIPID THERAPY: SUMMARY

- All post CABG patients take statin lifelong
  - Atorvastatin 40 – 80 mg daily or
  - Rosuvastatin 20 -40 mg daily
- If > 75 yo: “moderate dosing”
BETA-BLOCKERS

- 2002 = >600,000 CABG patients on pre-op beta-bl decreased 30 day mort
- 2003 Foody Circulation = Beta-bl, ASA, ACE-I, lipid lowering
- Beta-blockers especially for:
  - Prev MI
  - CHF
BETA-BLOCKERS: SUMMARY

- All CABG patients should be started on B-BI to prevent afib starting pre-op
- CABG patients w/ history of MI = Beta-blocker
- CABG patients w/ LV dysfunction = long acting metoprolol, bisoprolol, or carvedilol
- Quality benchmark
HTN

- Up to 80% CABG patients have
- <140/85 a reasonable goal
- After Beta-blocker, order of meds not well established
- If EF >40%, routine addition of ACE-I not recommended
- ARB an alternative to ACE-I
HTN: SUMMARY

- ARB <140/85 a reasonable goal (class IIa, level B)
- Start with beta-blocker
- Add ACE-I especially if EF < 40%, recent MI, DM, and CKD
DIABETES MGMT

- Requires a team
- Goals:
  - “moderate” control (125 – 200)
  - Hb A1c = 7%
- Exercise
- Weight loss, diet
SMOKING CESSATION

- 30 - 50% of CABG patients are smokers
  - Same mortality as non-smokers
  - More morbidity than non-smokers
  - 40% successful “quitters”
-Persistent smokers after CABG
  - Increased mortality
  - Increased re-intervention

van Domberg JACC 2000:36;3
SMOKING CESSATION

- Behavioral approaches plus medication
  - CBT
  - Intensive counseling
  - A “quit” day
- Smokers must be motivated
  - E-cigs don’t help
  - Nicotine patches can help
SMOKING CESSATION

- Behavioral approaches plus medication
  - Varenicline
  - Bupropion
- 10 week program:
  - Intense MD message
  - Nicotine gum
  - 12 group sessions with CBT
SMOKING CESSATION: SUMMARY

- Smoking cessation program Class IA
- Consider nicotine replacements
- Requires long-term mgmt
CARDIAC REHAB

- 26% risk reduction in mortality with CR
- Medicare covers up to 36 sessions over one year!
- ONLY 31% of CABG patients received at least ONE session CR (Circ 2007)
- ONLY 56% were referred (JACC 2009)
All post CABG patients should be referred for CARDIAC REHAB
EXERCISE AND METABOLIC SYNDROME

- Increased morbidity and mortality after CABG
- Encourage weight loss, and 20 minutes per day of aerobic exercise.
  - “sternal precautions” over after 4 – 6 weeks
- Aerobic and resistance training should be encouraged
  - Improves physical and mental health
SUMMARY: SECONDARY PREVENTION

- CABG works well, but not a cure
- All should be on 162 – 325 mg daily ASA (if on Clopidrogrel can drop to 81 mg)
- All should take “high intensity” statin (Atorvastin 80mg or Rosuvastatin 20 – 40 mg/day)
- Beta-blockers peri-op for afib prophylaxis and BP < 140/85
- ACE-I if EF < 40%, or recent MI with DM, CKD, and LV dysfunction
- **STOP SMOKING**
- *Exercise and weight loss*
- **CARDIAC REHAB**
QUESTION 1

1. Which of the following statements are TRUE?

A. All post-CABG patients should be on 162-325 mg daily ASA
B. All post-CABG patients should take “high intensity” statin
C. Beta-blockers are indicated peri-op for afib prophylaxis and BP< 140/85
D. ACE-I are indicated if EF<40% or recent MI with DM, CKD, and LV dysfunction
E. All of the statements are true
2. NON-pharmaceutical endeavors ALL post-CABG patients should hear discussed and encouraged by their providers include which of the following?

A. Smoking cessation
B. Exercise
C. Weight loss
D. Referral to cardiac rehab
E. All of the above