Cardiac Care in a Rural Setting

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Introduction

• Cardiac care in a rural setting requires full understanding of coronary heart disease (CHD)

• Lack of invasive coronary angioplasty makes proper medical management crucial.
Objectives

• List major risk factors for CHD.
• Identify modifiable risk factors and interventions
• Describe medical management of acute myocardial infarction when primary prevention fails.
Major Risk Factors CHD

1. AGE- Male > 45 years of age
2. Family history of CHD
3. Hypertension
4. Cigarette smoking
5. Diabetes
6. HDL <35 or LDL >160
Modifiable Risk Factors

- Hypertension
- Diabetes Mellitus
- Lipid abnormalities
- Cigarette smoking
Hypertension Diagnosis

• Diagnosis requires the following;
  – Measurement of Systolic BP and Diastolic BP on 2 or more after initial evaluation.
Hypertension Diagnosis

- Stage 1 - SBP 140-159 and/or DBP 90-99
- Stage 2 - SBP 160-179 and/or DBP 100-109
- Stage 3 - SBP 180-209 and/or DBP 110-119
- Stage 4 - SBP > 210 and/or DBP > 120
Hypertension Management

- Lifestyle modifications
  - Reduce alcohol
  - Weight reduction
  - Aerobic exercise
  - Salt reduction

- Pharmacological treatment
  - Beta blockers and thiazide diuretics
  - Additional drug categories
Diabetes Mellitus Diagnosis

- Random FSBS > 200 mg/dL
  - With symptoms
- Fasting Blood sugar of > than 125 mg/dL on two or more occasions
- BS of > 200 mg/dL 2 hours after 75g glucose challenge
Diabetes Management

- Diet is key to long term control
- Exercise helps utilize insulin
- Insulin for type 1 diabetics
- Oral medications for type 2 diabetics
  - Sulfonureas
  - Metformin
  - Troglitazone
  - Acarbose
Lipid Abnormalities

HDL <35 and/or LDL> 160

- Dietary restrictions
- Stage 1 diet
  - 30% of total daily calories from fat
  - Less than 10% of calories from saturated fat
- Stage 2 diet
  - 30% of total calories from fat
  - Less than 7% of calories from sat. fat
Lipid Abnormalities

- Medications only after dietary failure
- Drugs for lipid control:
  - Nicotinic acid
  - HMG coenzyme A reductase inhibitors
  - Gemfibrozil
  - Bile acid sequestrants
Treatment Acute Myocardial Infarction

• Making the diagnosis?
  – Clinical suspicion from history
  – EKG changes
  – Enzyme elevation
    • CKMB-Troponin I
  – Physical exam (murmur-bruits)
What Treatment Immediately?

- Unless contraindicated all patients with AMI should be given ASA.
- Beta-Blockers are first line therapy also if B/P can tolerate. Watch out for patients with contraindications.
- Oxygen at 4L/ min
The Patient Is Still Having Chest Pain!!!

• Nitrates
  – venodilation
  – reduce after load in congestive heart failure.

• Morphine
  – reduces anxiety
  – decreases catecholamine production.
What Other Steps Are Crucial?

- Thrombolytic therapy
  - tPA
  - Streptokinase
  - contraindications for thrombolitics?
- Heparin therapy to reduce reocclusion after tPA
Reperfusion Arrhythmias - Caution

- Reperfusion rates for tPA are between 75-90%.
- Ventricular tachycardia and even sinus bradycardia are signs of reperfusion.
  - Use ACLS protocols
Transport - Helicopter Here Yet?

- After medically stable, send patient to a tertiary center for intensive therapy.
- Coronary catheteritization is the gold standard in diagnosing CHD
- Need angioplasty or CABG capability in referral center
Summary

• Treatment of major risk factors for CHD should be the primary focus.
• Medical management with ASA, beta blockers, nitrates, thrombolytics and heparin should allow for stabilization of the patient.
• Transfer after stable for definitive diagnostic work up.
References

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