



CDA Guidelines –2003 Cardiorenal Prioritization

Who are the high risk patients

1. Vascular Protection → In All High-risk Patients

2. Hypertension Control

3. Control of Nephropathy

1. ACE inhibitor
2. ASA
3. Lipid control
4. BP control
5. Also as required:
 - Glycemic control
 - Lifestyle
 - Smoking cessation

Why Risk Stratify for CVD Risk ?

- When to initiate preventative strategies
 - Cost effective
 - Minimize treatment hazard
- When to screen for established CVD
 - Benefit from revascularisation

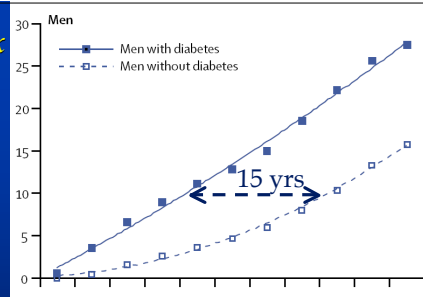
CV Risk Assessment for Patients with Diabetes

Must consider

- High lifetime risk for CVD (2-3X)
- High mortality when CVD develops (2X)
- Need for earlier vascular protection
 - Before 10 year risk > 20% CVD
- Perhaps it is too late if we wait ?

Age Dependence of CV Risk

CV Events / 1000

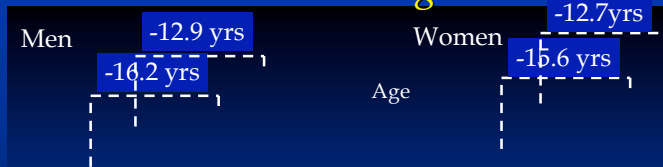


← 15 yrs →

Diabetes confers equivalent risk to ageing 15 years

Booth et al
Lancet 2006;368:29-36

Age at Transition Low to Moderate or High risk



Booth et al
Lancet 2006;368:29-36

Diabetes and Cardiovascular Disease Facts

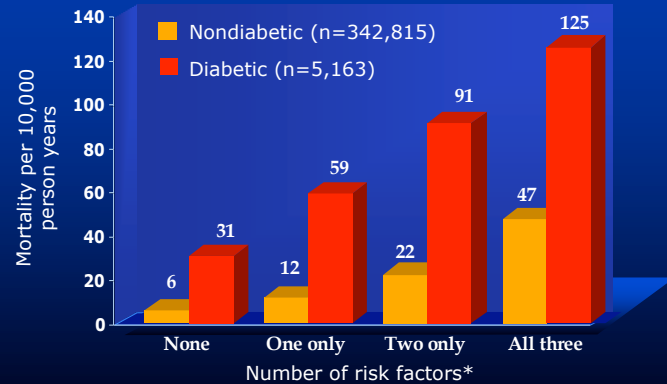
- Older patients with diabetes
 - Risk of MI / Stroke is high
 - Probably less than risk in non diabetic with MI
- Younger patients with diabetes
 - Not necessarily high risk over next 10 years
 - Yet life time risk is high
- Age of entry into high risk group
 - Male 40-47
 - Female 48-54

Challenge to identify patients at high risk

CVD Risk Assessment in Patients with Diabetes

- General CVD risk factors
 - Classical risk factors
 - Emerging risk factors
- Diabetes related risk factors
- Markers of sub-clinical atherosclerosis
- Unrecognized CVD

Impact of Diabetes on Cardiovascular Mortality MRFIT



*Risk factors analyzed: smoking, hypercholesterolemia, and hypertension.

Stamler J, et al. Diabetes Care. 1993;16:434-444.

CVD / Diabetes Related Risk Factors

- Duration of diabetes
- Glycemic control
- Microvascular disease
- Metabolic syndrome

Presence of Sub-Clinical Atherosclerosis

- Unrecognized CVD
 - Atypical symptoms
 - Silent MI
- Peripheral Vascular Disease
 - Carotid plaque / ↑ intimal medial thickness
 - ↓ Ankle brachial index
- Coronary artery disease
 - Myocardial perfusion scan
 - Coronary calcification
 - CT coronary angio

Risk Engines and Determining Outcomes in the Patient with Diabetes

- Framingham
 - 2% population
- PROCAM
 - Only male patients
- SCORE
 - Patients with diabetes not identified
 - Only calculates mortality risk
- UKPDS
 - Patients selected for clinical trial
 - Diabetes specific parameters
- Strong Heart
 - Population with high prevalence of diabetes and nephropathy
 - Includes (micro) albuminuria

HIGH RISK for Future CVD Events

Diabetes +

- Male age > 45 Female age > 50
- Clinical or Sub-clinical CVD
- Younger patients
 - with risk factors
 - » TC > 5.8 LDL >3.4
 - » BP > 140/90
 - » Smoking
 - » Microalbuminuria / CrCl < 60
 - » ? ECG LVH
 - » ? CRP