



Third Joint Conference
of the
British HIV Association (BHIVA)
with the
British Association for Sexual Health and HIV (BASHH)

1-4 April 2014

Arena and Convention Centre · Liverpool

THIRD JOINT CONFERENCE
OF BHIVA AND BASHH 2014



Dr James Coutts
St Thomas' Hospital, London

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COMPETING INTEREST OF FINANCIAL VALUE \geq £1,000:	
Speaker Name	Statement
Dr James Coutts	No competing interests of financial value of $>$ £1000
Date	April 2014

Cardiovascular disease

Risk assessment; risk reduction

Dr James Coutts
Consultant Cardiologist
Guys and St Thomas' NHS
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Conflict of interest: none

Why should the HIV physician be interested?

- Aging HIV population
- Higher levels of other risk factors in some HIV populations
- Cardiovascular risk of HIV infection
- Cardiovascular risk of HIV treatment

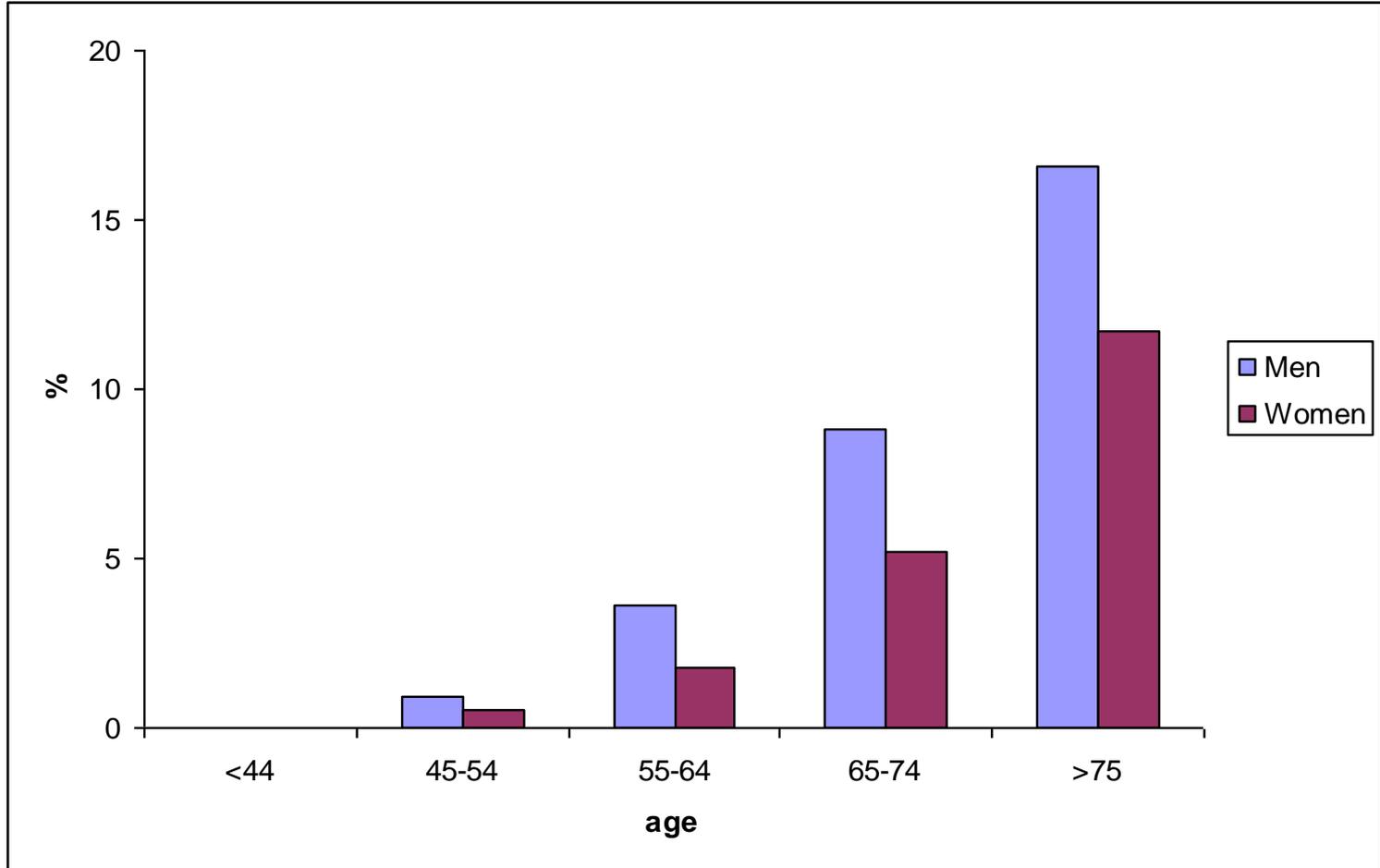
- Tendency for other health care professionals to leave all care of the HIV patient with you...

Coronary artery disease

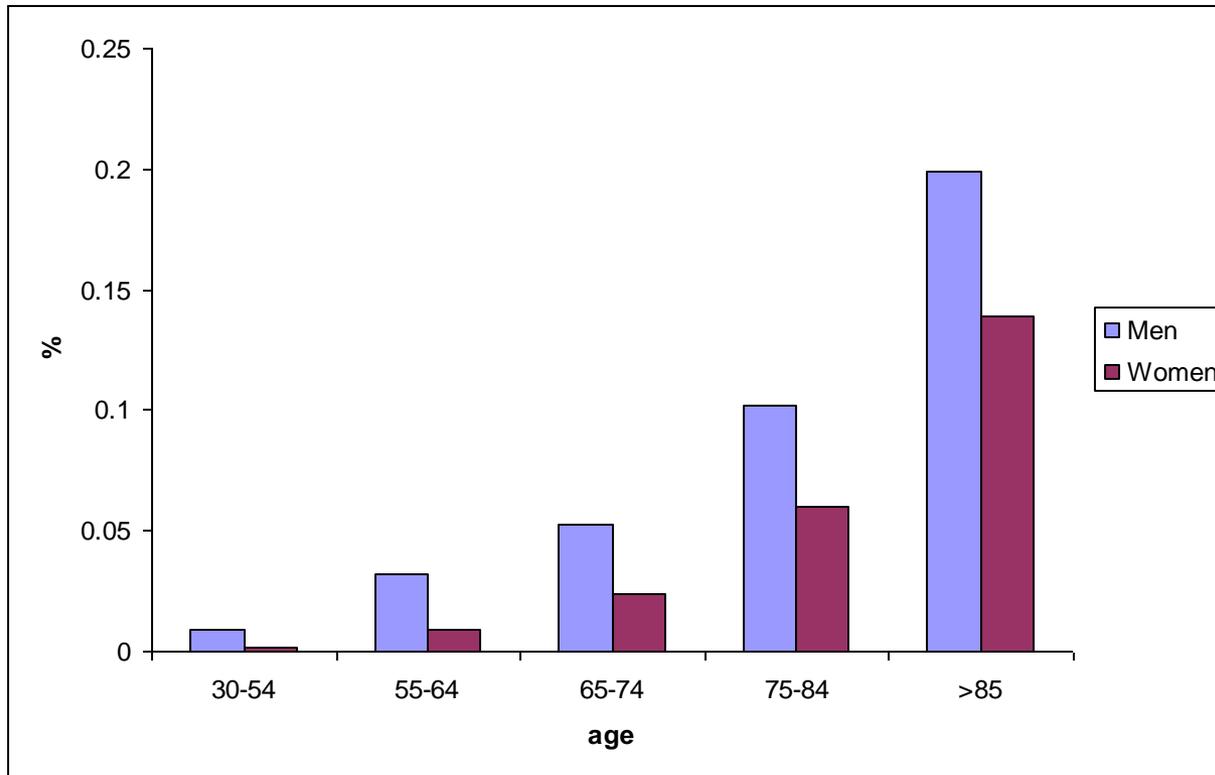
- Most common cause of death, as a single entity, in UK
- 2010:
 - approx 1 in 5 male deaths
 - approx 1 in 10 female deaths
- HIV population:
 - SMR (cardiovascular) of the order of 1.5-2x that of non-HIV population

Prevalence of 'angina'

UK data 2011



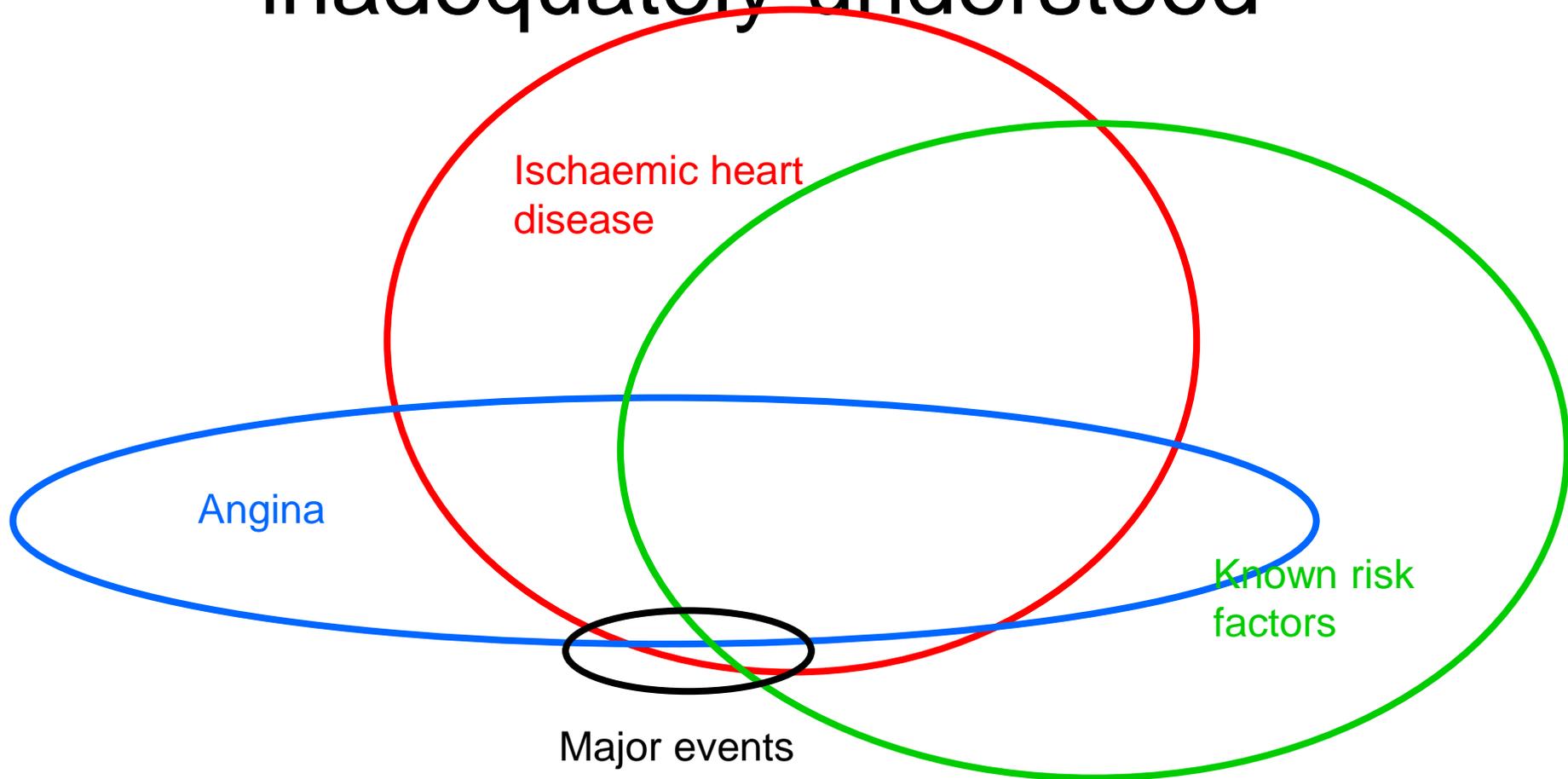
Reported incidence of myocardial infarction (fatal and non fatal) UK data 2010



Diverse range of risk factors

- ‘Classical’:
 - Age
 - Male
 - Family history
 - Smoking
 - Diabetes
 - Hyperlipidaemia
 - Hypertension
 - High BMI
 - Racial origin
- Less well recognised:
 - Renal failure/dialysis
 - HIV and its treatment
 - Erectile dysfunction
 - Drugs
 - illicit: cocaine
 - prescribed: steroids
 - Radiotherapy
 - Auto-immune (vasculitides)

The overlaps are complex and inadequately understood



Very hard to know who you should focus attention on

Cardiovascular risks associated with HIV

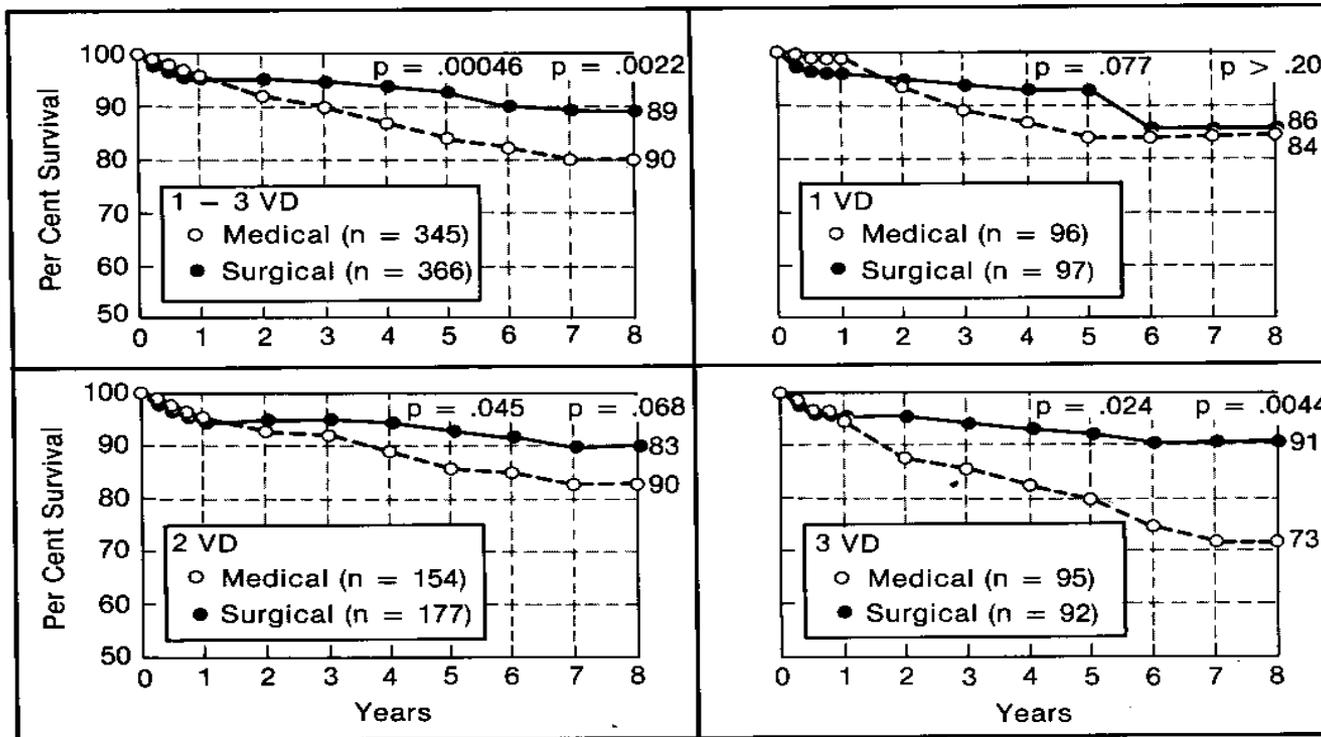
- Higher rates of other risk factors of general population:
 - eg some series report 50% smoking rates
 - High levels of diabetes and hyperlipidaemia
- HIV virus itself implicated in promotion of atherosclerosis
- HIV Therapy
 - Protease inhibitors: Suggestion of increased rate of MI in many series with odds ratio of the order of 1.1/year of therapy
 - Nucleoside reverse transcriptase inhibitors/non-nucleoside reverse transcriptase inhibitors: data appears conflicting

What interventions can you make?

- Risk factor modifications
 - Lifestyle and contributing conditions
 - Smoking, exercise, weight and diet
 - Diabetes, hypertension, dyslipidaemia
- Protective medications
- Surgery: angioplasty, coronary artery bypass grafting.

CABG may improve prognosis in certain groups

(European coronary surgery study)



Caveats:

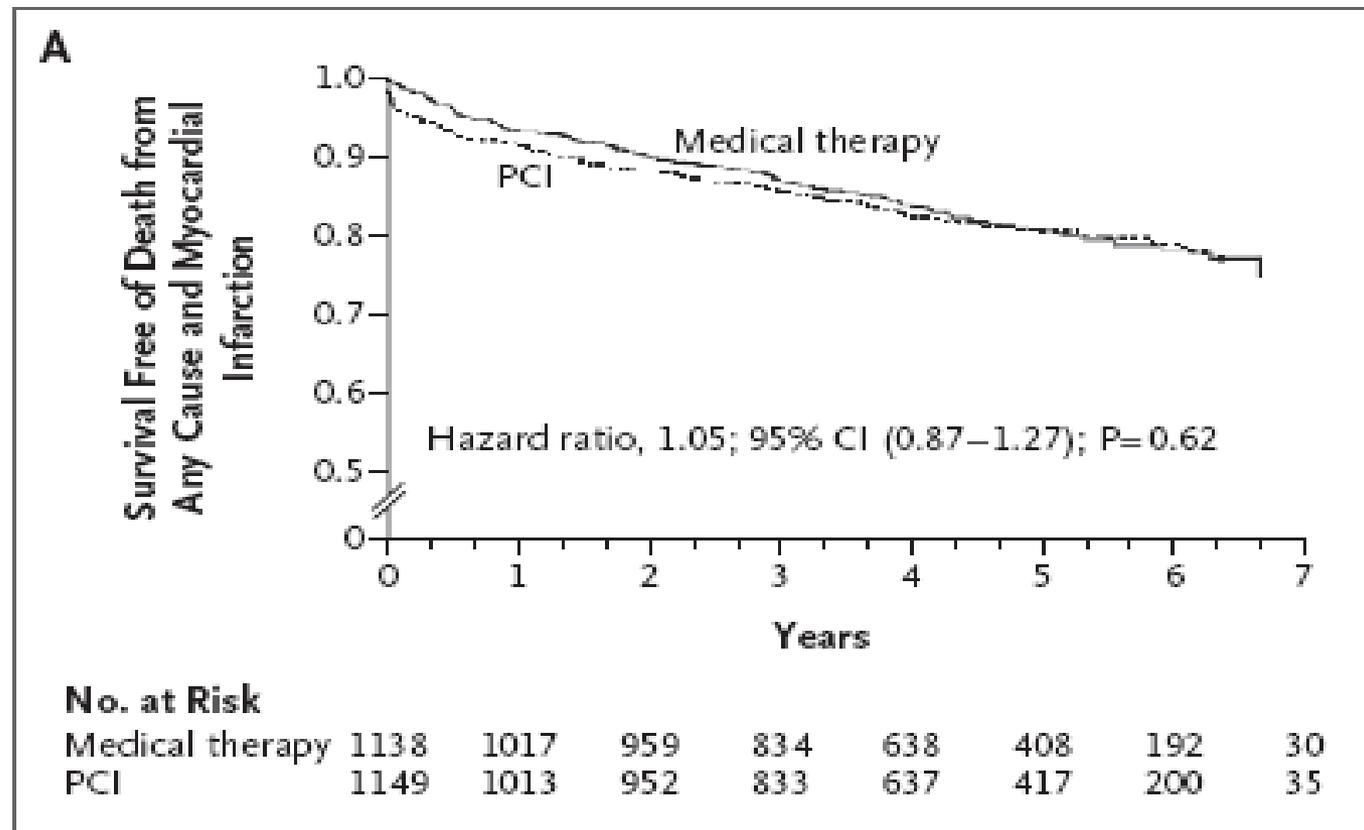
Three major surgical trials that were undertaken in the 1970s have shaped thinking ever since.

All evaluated CABG vs Medical therapy

- Medical therapy in 1971 eg Davidson 'The principles and practice of medicine': lifestyle, nitrates, 'propranolol may be helpful'
- Surgery has improved: arterial conduits, improved patient selection, bypass & operative techniques, post-op ITU care etc.
- Medicine has improved: antiplatelet agents, statins, beta-blockers, ACE inhibitors, etc..
- It is not clear if the conclusions drawn in the 1970s are still valid

Percutaneous Intervention- angioplasty

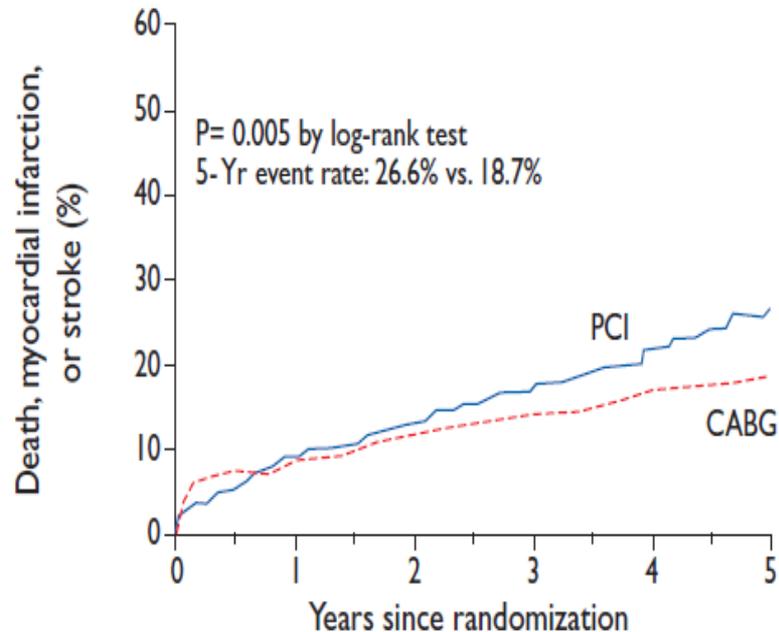
- Multiple trials, comparing PCI with medical therapy
- eg Courage 2007.



CABG can offer a survival benefit above PCI in some sub-groups

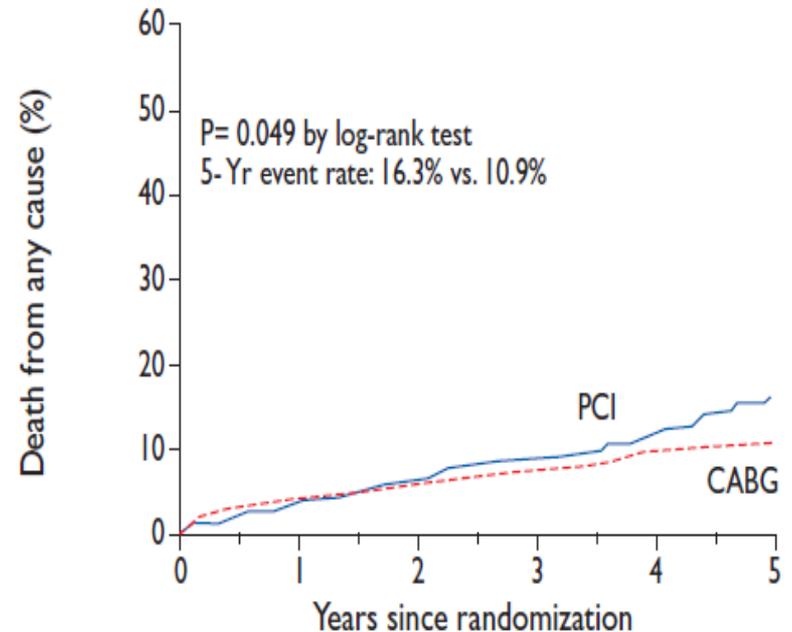
Diabetic patients-(Freedom. 2012)

A - Primary Outcome



No. at Risk	0	1	2	3	4	5
PCI	953	848	788	625	416	219
CABG	947	814	758	613	422	221

B - Death



No. at Risk	0	1	2	3	4	5
PCI	953	897	845	685	466	243
CABG	947	855	806	655	449	238

Revascularisation for Chronic stable angina/ischaemic heart disease

- Evidence that revascularisation improves prognosis in the chronic setting is weak
 - CABG for certain groups is quite possible
 - Evidence lacking for angioplasty
- Both are excellent for symptom control
- *Above applies only to the chronic setting- for acute coronary events- revascularisation has clear and significant benefits*

Lifestyle

- Smoking, exercise, weight loss and diet
- Difficult to quantify, but examples include:
 - 50% reduction in further infarct rate in smokers who stop
 - Reduction in mortality, but not infarct rate, through cardiac rehabilitation exercise programmes

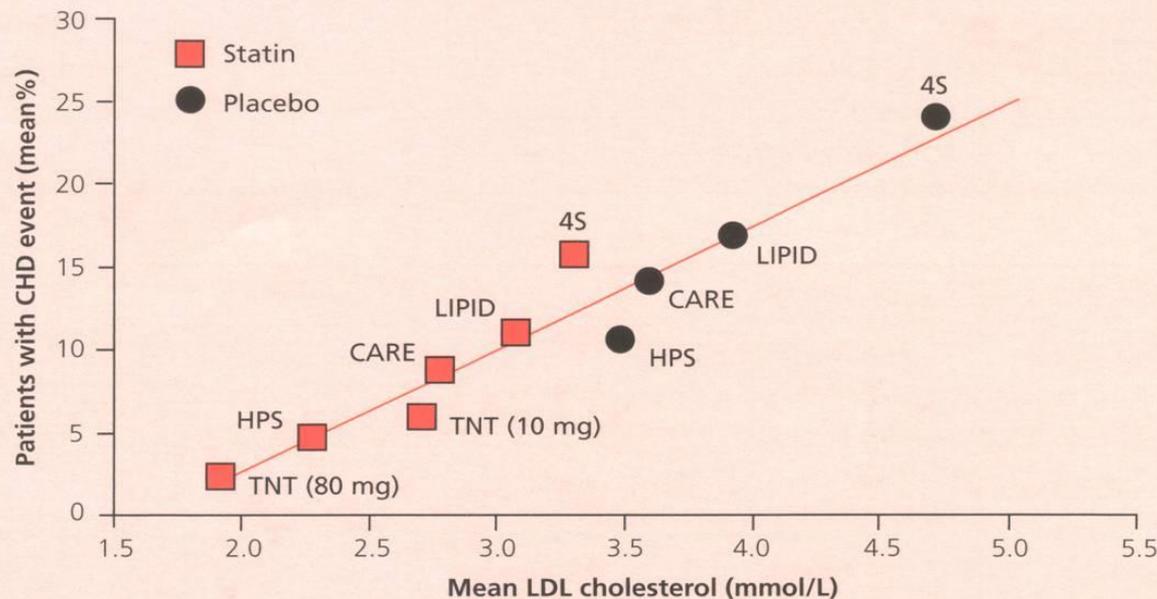
Medical therapies specifically to reduce risk

- Statins
- ACE inhibitors
- Aspirin

Statins – reducing cardiac events

- very strong recurring theme

Figure 1. Event rates plotted against LDL cholesterol levels during statin therapy in secondary prevention studies



Key:

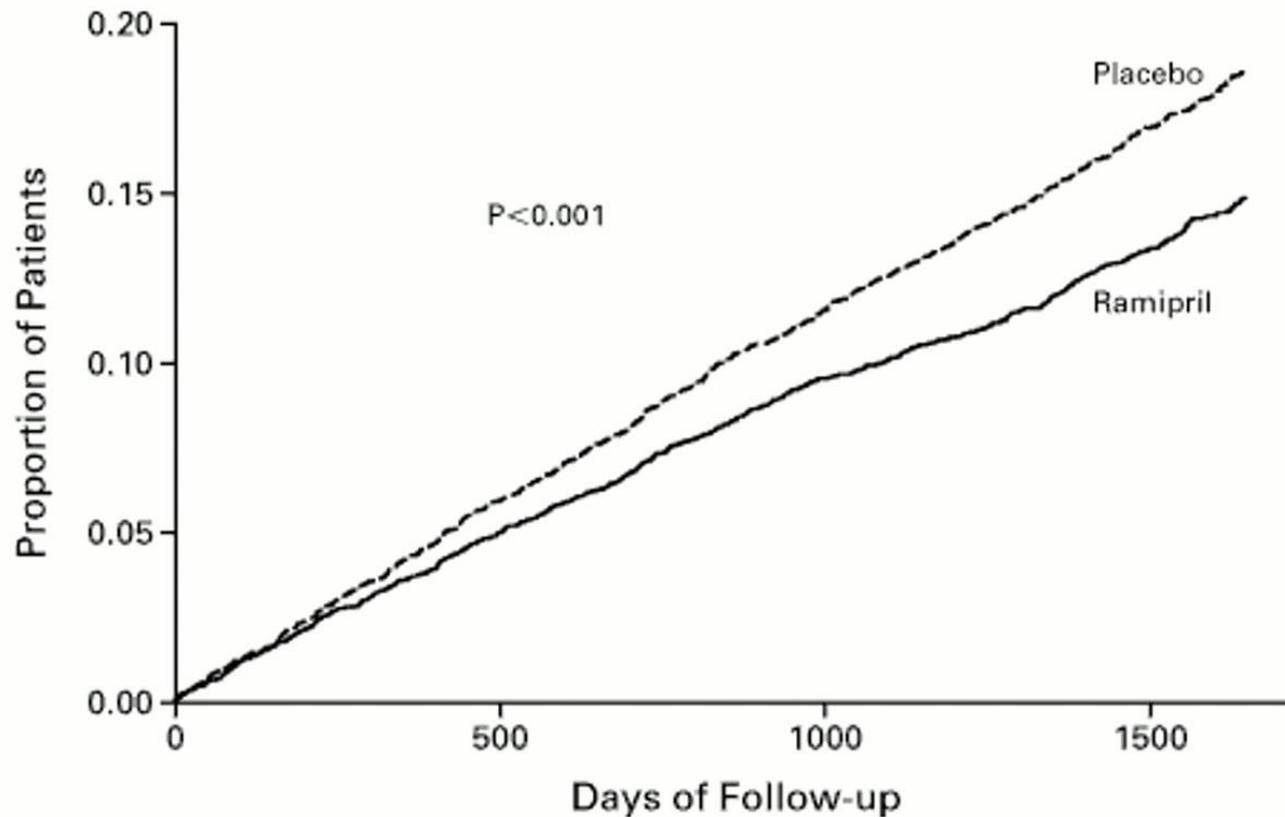
HPS = Heart Protection Study, CARE = Cholesterol and Recurrent Events Trial, LIPID = Long-term Intervention with Pravastatin in Ischaemic Disease, TNT = Treatment to New Targets of study, and 4S = Scandinavian Simvastatin Survival Study. Event rates for HPS, CARE, and LIPID are for death from coronary heart disease and non-fatal myocardial infarction. Event rates for 4S and the TNT study also include resuscitation after cardiac arrest.

Adapted from *Br J Cardiol* 2004; **11**: 457 and *N Engl J Med* 2005; **352**: 1425-35

ACE Inhibitors

Ramipril: Hope trial.

>55yrs, with: known vascular disease; or 2 risk factors including DM



Aspirin in primary prevention

- Multiple trials and meta-analyses- often conflicting
- Likely small benefit vs small risk (bleeding)
- In practical terms- offer to patients for:
 - primary prevention with two or more significant cardiac risks, if no major c/i.
 - Secondary prevention if no major c/i

Summary

- In broad terms, in the chronic setting,
 - Prognosis improved by Medical and lifestyle therapies
 - Revascularisation improves symptoms, prognostic benefits not clear

Examples

- **56 yrs MSM.**
- Smoker. Non diabetic. Strong family history of IHDx (father died MI at 54).
- Diagnosed HIV positive 10 years ago on routine testing
- CD4-445 VL- <40 copies/ml
- On Atripla for past 3 years

- No symptoms. Normotensive: 120/70. Not overweight

- What would you like to do?
 - 1: lifestyle advice –smoking, diet, exercise
 - 2: as above + statin and check lipid profile
 - 3: as above and a non-invasive ischaemia test- exercise/nuclear medicine/stress echo
 - 4: Send him to a cardiologist – please do an angiogram

No 'correct' answer

1. Ok. Family history remains a concern
2. My preference. Family history +smoking+ HIV-arguments for a statin.
Consider an ACE inhibitor + aspirin
3. What will you do with the result?
4. No convincing evidence for revascularisation in absence of symptoms

What if?

- He/ his GP are not keen on a statin.
- Not really motivated re lifestyle /smoking cessation

Consider coronary CT angiogram

- High degree of accuracy in detecting atheroma/ coronary stenoses with low radiation risk (2-4mSv with >256/340 slice units)

What if:

- He starts a statin. He says he's stopped smoking.
- But he does in fact have very clear symptoms of angina
- Do you:
 - 1. Do a non-invasive test eg myocardial perfusion scan
 - 2. Start some tablets- beta blocker, nitrates
 - 3. Refer to a cardiologist
 - 4. All of the above

- Not sure of the virtue of a non-invasive test. He has risk factors and a clear story.
 - Treat as angina
- Beta blocker first line. Diltiazem if c/i.
Second line: nitrates
- If symptoms require it then angiography +/- revascularisation

What if?

- He has an anterior STEMI
 - Treated with primary angioplasty and his LV escapes relatively unscathed. He does however have very severe diffuse coronary disease, but is now asymptomatic
- Do you:
 1. Treat as a non HIV patient:
 - Lifestyle/co-morbidities, statin, antiplatelet agents, ACE, BB
 2. Change his ART to more cardiac friendly versions
 3. Push for CABG

Data is lacking

- Certainly treat with everything a non HIV patient would have
- Needs discussion re risks of HIV therapies vs benefits. My prejudice is that you would continue the optimum HIV therapy as first priority
- MDT review of coronary cases, but remembering there is no clear evidence to guide

In summary

- Data is lacking for the HIV population
- Best approach at present is likely to treat as for anyone else, but adding HIV as an independent risk
- Evidence is strong for statin therapy in the non HIV setting

- In practice: in all cases
 - Lifestyle advice
 - Control of co-morbidities
 - Lipid assessment

- Consider statin for males >45, females >55 with another risk (HPT/DM/Family history) JACC 2013 vol 61: no 5
- (rosuvastatin, atorvastatin, maybe pravastatin)
- Consider ACE, aspirin if multiple risks

- To help quantify risk in difficult cases, consider anatomical tests (eg CT angiography)



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