Smoking, Cholesterol, Obesity and Blood Pressure

The BIG 4 modifiable causes of vascular disease

Fix them and live forever
(What is optimal statin usage?)

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No conflicts of interest

4 big, modifiable, changing causes of vascular disease

Tobacco
Blood pressure
Blood lipids
Obesity

THE UK MILLION WOMEN STUDY

Vascular mortality, by amount smoked

THE UK MILLION WOMEN STUDY

How important is blood pressure to vascular death?

20 mmHg drop in systolic BP halves vascular mortality at 35-69

How important are blood lipids?

Good statin regimen reduces LDL cholesterol by 2 mmol/L and vascular risk by 40%
(Non-vascular mortality is unaffected)

Prospective Studies Collaboration (1 million adults)
PSC, Lancet 2002; 360: 1903

CTT, Lancet; online Nov 9, 2010
How important is obesity to vascular mortality?

If overweight, 10 units BMI about halves MI & stroke

PSC, Lancet 2009; 373: 1083

Vascular Death Rates Are Falling

1970: 1 in 4

2010: 1 in 20

1970s Smoking Cessation

1980s Widespread aspirin use

2000s Widespread statin use
The Prevention Paradox

We worry about “high” risk patients, but...

Most heart attacks and strokes occur in “lower” risk patients

Absolute effects on MAJOR VASCULAR EVENTS of lowering LDL cholesterol with STATIN therapy

Control

Combined evidence:
~80% relative risk reduction per 1.5 mmol/L
(since 0.79 x 0.84 = 0.67)

Potency of various statin regimens

Doubling statin dose = additional 6% reduction in LDL cholesterol

<table>
<thead>
<tr>
<th>Statin</th>
<th>Very Low</th>
<th>Low</th>
<th>Moderate</th>
<th>Intensive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluvastatin</td>
<td>40 mg</td>
<td></td>
<td></td>
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<tr>
<td>Pravastatin</td>
<td>20 mg</td>
<td>40 mg</td>
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<tr>
<td>Simvastatin</td>
<td>10 mg</td>
<td>20 mg</td>
<td>40 mg</td>
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<tr>
<td>Atorvastatin</td>
<td>10 mg</td>
<td>20 mg</td>
<td>40 mg</td>
<td>80 mg</td>
</tr>
<tr>
<td>Rosuvastatin</td>
<td>5 mg</td>
<td>10 mg</td>
<td>20 mg</td>
<td>40 mg</td>
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</tbody>
</table>

Atorvastatin 40 / 80 mg or Rosuvastatin 20 / 40 mg

We need to identify large numbers of people at moderate vascular risk and treat them effectively


Treat early and treat intensively