Equal survival in normal myocardial perfusion scintigraphy between stress-only studies and stress + rest studies – a preliminary report

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Disclosures

• N/A
Background

• Current MPS imaging guidelines differ in their opinion whether a rest study is necessary or not when the stress study is interpreted as normal.

• Advantages of stress-only approach
  – reduced radiation exposure
  – lowered costs by eliminating unnecessary imaging time and radiopharmacologic doses
  – improved laboratory efficiency by freeing up camera time
Purpose

• The aim of the present study was to determine the prognosis of a normal stress-only MPS compared to a normal stress-rest MPS in a retrospective manner.
Methods

• Patients who underwent MPS 2004-2007 (4919 patients) were considered.
• 91 patients were excluded due to missing data.
• A study interpreted as normal (perfusion assessed to be homogeneous throughout the myocardium), was not followed by a rest study.
• Patients were divided into subgroups based on the final report according to clinical routine.
• Endpoint: ischemic cardiac death, MI, unstable angina
Methods: subdivision of patients

• Perfusion data only:
  – Normal stress-only
  – Normal stress+rest
  – Abnormal/equivocal

• Perfusion data + EF + EDV:
  – Normal stress-only
  – Normal stress+rest

• Perfusion data only:
  – Normal stress-only vs normal stress+rest regarding:
    • Stress (exercise/Adenosine), sex (male/female)
**Results: all patients, perfusion data**

Patients included:
- 1396 Normal stress-only
- 2221 Normal stress+rest
- 1211 Abnormal/equivocal

In total: 4828
Number of events: 414
Fraction of events: 8.6%
Mean follow-up time: 6.2 years

\[ P < 0.0001 \]
Results: normal patients, perfusion and LV data

Patients excluded:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Normal Stress-only</th>
<th>Normal Stress-rest</th>
</tr>
</thead>
<tbody>
<tr>
<td>missing EF</td>
<td>527</td>
<td>325</td>
</tr>
<tr>
<td>missing EDV</td>
<td>807</td>
<td>374</td>
</tr>
<tr>
<td>low EF</td>
<td>61</td>
<td>83</td>
</tr>
<tr>
<td>high EDV (m)</td>
<td>27</td>
<td>55</td>
</tr>
<tr>
<td>high EDV (f)</td>
<td>20</td>
<td>29</td>
</tr>
</tbody>
</table>

Number of cases: 2040
Fraction of events: 4.5%
Mean follow-up time: 6.0 years

P < 0.0001
Results: Women

Number of cases: 1897
Fraction of events: 3.5%
Mean follow-up time: 6.4 years

P < 0.0001
Results: Men

Number of cases: 1535
Fraction of events: 7.6%
Mean follow-up time: 6.2 years

P < 0.0001
Results: Adenosine

Number of cases: 1474
Fraction of events: 7.3%
Mean follow-up time: 6.1 years

$P < 0.0001$
Results: Exercise

Number of cases: 1933
Fraction of events: 3.9%
Mean follow-up time: 6.5 years

P < 0.0001
Conclusion

• Patients with a normal stress-only study have better prognosis than patients with normal stress+rest studies
• It is safe to omit the rest study if the perfusion stress study is normal