Debate:

AAA <5.5cm should not be treated invasively

Jonathan Earnshaw
• Consultant Vascular Surgeon, Gloucestershire Hospitals NHS Foundation Trust
• Clinical Lead, NHS AAA Screening Programme (2009-2019)
• Editor in Chief, BJS

No conflicts to declare

Indication for elective AAA repair

• Small aneurysm trial
• ADAM trial

Balance of risks:

Risk of AAA rupture vs. Risk of elective AAA repair (VSGBI 2018: open repair 3.2%, EVAR 0.7%)

Conclusion of SAT and ADAM

• SAT and ADAM similar conclusion:
  - No benefit for early intervention for AAA <5.5cm.
  - BUT
    • Never been a study on at what diameter intervention better than watchful waiting

Why did 5.5cm become indication for elective AAA repair?

• Loss of equipoise among vascular surgeons
• Post mortem studies
• Outcomes in patients who decline, or are not fit for intervention at 5.5cm
• Surveillance men from AAA screening
NHS AAA Screening Programme (England)
Autumn 2019

- 2,190,614 men invited
- 1,722,312 men screened (uptake 79%)
- Over 20,000 AAA (>3cm) detected
- Prevalence 1.19%
- Over 15,000 men in surveillance
- Over 5000 men referred for surgery
- Over 4000 men treated (1.46% mortality)

Results available: https://www.gov.uk/topic/population-screening-programmes/abdominal-aortic-aneurysm

Surveillance results: risk of AAA rupture (50,000 men years of surveillance)

<table>
<thead>
<tr>
<th>AAA diameter</th>
<th>Number of patients</th>
<th>Event rate</th>
<th>Incidence rate per 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;5.5cm</td>
<td>15,197</td>
<td>29</td>
<td>0.19</td>
</tr>
<tr>
<td>5.5-6.4cm</td>
<td>14,680</td>
<td>28</td>
<td>0.19</td>
</tr>
<tr>
<td>6.5-7.4cm</td>
<td>14,316</td>
<td>26</td>
<td>0.18</td>
</tr>
<tr>
<td>&gt;7.4cm</td>
<td>14,316</td>
<td>25</td>
<td>0.17</td>
</tr>
</tbody>
</table>

Circulation 2019; 139: 1371

NAAASP conclusions

- Men in surveillance in NAAASP low risk of rupture <5.5cm
- No indication to reduce referral threshold

Debate conclusions

- Risk of rupture less than risk of intervention in AAA <5.5cm (6cm on CT)
- No indication to intervene on AAA < 5.5cm (in men in regular surveillance).

- VQI 2003-2017
  9353 (41%) EVARs < 5.5cm on CT
  mortality 0.4%
  J Vasc Surg 2019; 70: 1446

Aortic diameter measurement

- 5.5cm on ultrasound (using inner to inner method, as in NAAASP) = 6cm on CT

Indications for elective AAA repair

- Vascular community should admit it does not know risk of AAA rupture above 5.5cm

- Options
  - Medium AAA Trial 5.5-6cm
  - Medium AAA Trial in patients 75 and over
  - RCT of delayed AAA intervention in patients with low risk AAA (risk scoring/dynamic CT)

NB Draft NICE guidance, UK 2019
No circumstance under which elective AAA repair with EVAR is cost effective using current willingness to pay thresholds.