UK NICE AAA Guidelines
Why do they favour OR over EVAR and what was the influence of the EVAR-1 late results?

Andrew W. Bradbury
Tuesday, 19 November 2019, 3.02-3.07P
Session 6, Grand Ballroom East

In the UK, we have known for some time that EVAR is unlikely to be cost-effective in AAA patients fit for OR

But, for the current NICE guidelines, we wanted to build a new cost-utility model using the most recently available RCT and non-RCT clinical and economic data

NICE Cost-utility Analysis (2018)
Simplified methodology, full details on NICE web-site
1. Pre-operative mortality
2. Peri-operative (30-day) mortality
3. Post-peri-operative (after 30-day) mortality

Disclosures
• No financial disclosures
• Chair of the UK NICE National AAA Guideline Committee (GC)

In the public domain May 2018
NICE Cost-utility model: Overall survival
Most (97-99%) patients now survive their EVAR/OR. So, it is post-peri-operative (>30-day) mortality that largely determines overall survival - and this is better with OR
**QALY’s after OSR and EVAR**

Small EVAR health gain in the first 4 years of the model due to superior peri-operative survival and smaller HRQL impact

**BUT**

Over time the superior post-peri-operative OSR mortality (and morbidity) causes an increasingly visible difference in cumulative QALYs

---

**Probabilistic sensitivity analysis (PSA)**

ICER ≤ £20K per QALY (UK NHS WTP threshold) in only 0.1% of 5000 simulations

EVAR more expensive in 100%

OSR dominates EVAR in 86.4%

---

**Cost-effectiveness acceptability curve**

UK Willingness To Pay (WTP) threshold £20,000 per QALY

---

**Is EVAR likely to be cost-effective in patients unlikely to survive 8 years?**

Assume no difference in post-peri-operative mortality between EVAR and OSR out to 8 years

Increase HR for post-peri-operative survival compared to general UK population (models an increasingly unfit AAA population)

Even when HR = 15 (only 1% OSR patients reach 8 years) the INMB is negative (EVAR not cost-effective) at an ICER of £20K per QALY (despite small QALY gain [+0.022] with EVAR and lower excess EVAR costs [£4.4K due to short follow-up])

---

**What happens if you change relative peri- (30-day) and post-peri-operative (>30-day) EVAR clinical effectiveness**

Highly certain that no plausible level of simultaneous variation in these parameters will = EVAR ICER ≤ £20K

All ICERs in region defined by their 95% confidence intervals > £30K

ICER is highly dependent on the post-peri-operative mortality HR

For EVAR ICER ≤ £20K, need HR < 1, indicating superior long-term survival after EVAR (unlikely)
Conclusions

The NICE Cost-utility model (2018) inputs data from all 4 RCTs and also non-randomised sources.

Although strengthened by them, the model outputs (conclusions) are not dependent on the late (> 8 years) EVAR-1 results.

From a UK perspective, it is highly unlikely that EVAR is a cost-effective option for AAA patients for whom OR is suitable.

It has not proved possible to identify a sub-group of patients for whom that is not the case.

It seems likely that the same will be true in other countries where the AAA population and the level of health-care spending is similar.

NICE AAA guideline committee

Thank you