Author's response to reviews

Title: Is population screening for abdominal aortic aneurysm cost-effective?

Authors:

Lars Ehlers (lars.ehlers@stab.rm.dk)
Jan Sørensen (jas@cast.sdu.dk)
Lotte Jensen (lotte.groth@stab.rm.dk)
Merete Bech (merete.bech@stab.rm.dk)
Mette Kjølby (mette.kjoelby@stab.rm.dk)

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Author's response to reviews: see over
Point-by-point response to review comments

Response: We thank the referees for detailed and constructive comments. Below is given a point by point response to all comments. We have made a thorough revision of the article and we believe the comments have helped us improve our work. As recommended that the paper has also been copyedited to improve the style of written English.

Referee 1.

Referee 1.: “The paper reviews published cost-effectiveness studies of AAA screening .... This has been done before (authors ref 25), and to most readers will be of limited value.”

Response: First, the former review by Campbell et al. (ref 25) has not been updated recently. Their search period ended in 2003. Our article includes 10 new cost-effectiveness analyses. Only 4 studies overlap. Second, Campbell et al. only consider model based analyses and excludes studies conducted alongside clinical trials, which is a major source of evidence for cost-effectiveness. Thus, we believe that our review gives the ‘whole’ picture of cost-effectiveness of AAA screening and provides a systematic overview that has not been presented before. We have added a comment about this in the text, so readers can understand the difference between to two reviews.
Referee 1.: “A new cost-effectiveness study might be of value .... But cataloguing the deficiencies of previous studies holds little interest”.

Response: We believe our review could be of great interest to at least some of the readers. We find a tendency that all prior studies use ‘optimistic’ assumptions in favour of AAA screening. We provide a detailed presentation of the assumptions regarding effectiveness and cost and trace the problems of using prevalence data to estimate the effect of incidence rounds, and of using average data for a group of elderly men (65-79 year old men) as proxy for parameters relating to 65 year old men. These arguments have not been put forward before. Consequently it seems reasonable to continue the discussion of whether AAA screening is cost-effective or not, even though all former studies claim so. We have added a number of explanations in the text to strengthen this ‘line of reasoning’ in the article. Hopefully this has increased the value of our review. In addition, it is worth stating that all former studies have been written by cardiovascular surgeons, who will be involved in the treatment of patients identified from implementation of such screening programmes. Thus, the risk of bias from a conflict of interest cannot be excluded. This observation is now added in the discussion.

The information about the type of deficiencies should also serve as valuable inputs for any researcher who might engage in future cost-effectiveness analysis of AAA screening. By pinpointing the ‘interior’ parts of the former studies, new studies can be designed to overcome such deficiencies. As is clear from the text, we strongly recommend that a new cost-effectiveness analysis should be performed.

Referee 1.: Unusual abbreviations (UL, HTA, ICER, Qol) are being used without being introduced.
Response: Thank you for pointing out these omissions. They are now corrected.

Referee 2.

Referee 2.: The section on ‘Cost….does not convincingly demonstrate the assumptions used were necessarily optimistic. This needs to be clarified with more detail.

Response: We agree. We have now strengthened our most important arguments.

Referee 2.: One important factor that should be mentioned is the increasing use of endovascular aneurysm repair (EVAR).

Response: We agree. This is now added to the text.

Referee 2.: Mention should also be made of the cost of graft surveillance and secondary procedures following EVAR.

Response: We agree. This is now included as well.

Referee 2.: The discussion concerning the impact of smoking on longevity, quality of life and health service utilisation is relevant but lacks detail. The authors’ argument could be strengthened by estimates of the magnitude of effect that smoking has on the cost analyses of screening. For example: what are the cost-benefit implications of the decision in the USA to only screen smokers?

Response: We agree. We have inserted the arguments from US.
Referee 2. The effect of smoking cessation on reducing the incidence of undiagnosed AAA in the community deserves more emphasis – it is possible that the incidence may fall to levels that render screening ineffective in terms of lives saved, let alone cost.

Response: We agree. We have now inserted this argument in the discussion as well.

Referee 2.: Another factor .... Is the possibility that ad hoc detection of cases of AAA will gradually increase as imaging ... becomes more widely utilised.

Response: We agree. This is now included in the discussion.

Referee 2.: Minor errors P3, P4, P5, P7, P8.

Response: Thank you for pointing out these errors. They are now corrected.

Referee 3.

Referee 3.: there are a few minor typographical and formatting errors a, b, c, d.

Response: Thank you for pointing out these errors. They as now corrected.

Referee 3: My main problem ....with trying to do a systematic review of the available evidence is that every country has different tariffs .. and cross examination is flawed.

Response: We agree. This is a well known problem within the field of health economics. A systematic review of health economic evaluations is ‘something else’
than a systematic review of homogeneous RCTs. The main difference is that external validity is assumed to be high in clinical trials but low in economic studies for exactly those reasons mentioned by referee 3. Though we cannot reject the conclusion that AAA screening is cost-effective by our systematic review of health economic evaluations we can nevertheless provide a valuable overview of the published literature and a critical assessment of the economic evidence.

Referee 3.: Although ..... the individual conclusions of cost effectiveness cannot be challenged on the basis of this systematic review.

Response.: We agree. We only challenge the assumptions on which the studies of cost-effectiveness are based. Of course we cannot be sure of the magnitude a change in these assumptions will have on the ICER. However, we can point out that an ‘updated’ cost-effectiveness analysis ought to be made.

Referee 3.: Patients with AAA can return to a Qol that is comparable to the average population.

Response: Actually, we disagree on this. We believe there is a lack of good evidence about Qol after elective surgery for AAA. This area needs further research. The studies of Qol after AAA repair are in general small sized, short term (up to one year) and most often carried out as part of larger clinical trials with another primary purpose than studying Qol. Results about Qol are also confusing/conflicting. Some studies conclude that patients have a lower Qol before surgery and ‘only’ obtain the same level of Qol after surgery as the experienced before.
Most importantly, the ideal study that compares QoL before and after screening in the screening arm (and all sub-groups) versus the non-screening arm has – to our knowledge - never been carried out.

Referee 4.

Referee 4.: My only remark is there are two Table 1.

Response: This is now corrected.