On-line survey:
Clinical assessment of AAA rupture risk.
Are biomechanical predictors needed?

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On-line survey: Clinical assessment of AAA rupture risk.

Introduction

Justification of abdominal aortic aneurysm (AAA) repair is strongly linked to the estimation of the formation's risk of rupture. However, AAA rupture criteria are under controversial scientific and clinical discussion. Recently, biomechanical investigations of the AAA are found to give reliable rupture risk predictors. To this end one assumes that mechanical stress in the AAA wall due to blood pressure, determines the formation's rupture risk.

Aims and Method

This survey tries to estimate the current clinical status of AAA rupture risk prediction as well as the need of biomechanical AAA rupture risk estimators. About 1500 clinicians, mainly European vascular surgeons, have been invited and had access to the survey site with their personal login data. The voters have been invited by e-mail and the underlying database was based on available information from the internet. The survey asked a maximum of seven questions, where the first one, i.e. “Are you involved in AAA repair of any kind?” had the aim to filter out unqualified voters, i.e. answering this question with “NO”, quits the survey. We had 409 replies to the survey, where 392 voters answered the above question with “YES” and continued with the remaining questions:

Which criteria does your institution consider to estimate the rupture risk of AAAs?

Possible answers:

1. Maximum diameter of the AAA
2. Expansion rate of the AAA
3. Growth of the Intraluminal Thrombus
4. High blood pressure
5. High mechanical stress in the AAA
6. Others (please indicate which one)

Do you think the rupture risk of AAAs is reliable predicted by the criteria your institution considers?

Possible answers:

1. I think it is reliable in 100% of all cases.
2. I think it is reliable up to 99% of all cases.
3. I think it is reliable up to 95% of all cases.
4. I think it is reliable up to 90% of all cases.
5. I think it is reliable up to 75% of all cases.
6. I think it is reliable up to 50% of all cases.
7. I think it is reliable it's not reliable at all.
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Do you know about biomechanical criteria to estimate AAA rupture?

Possible answers:

1. Yes, and I'm familiar with them.
2. Yes, but I'm not familiar with them.
3. No, I have never heard about them.

Would you include biomechanical criteria to estimate the risk of AAA rupture of your patients?

Possible answers:

1. Yes, indeed!
2. Yes, basically I would do that.
3. May be, but I'm not sure.
4. No, there is no need.
5. No, not at all.

Voters, who answerd this question with “No, there is no need” or “No, not at all” quit the survey, while the others had to answer two further questions to answer, i.e.

How long could a biomechanical evaluation of one AAA take?

Possible answers:

1. 5 minutes
2. 10 minutes
3. 30 minutes
4. more than 30 minutes

How much could a biomechanical evaluation of one AAA cost?

Possible answers:

1. 20 Euro
2. 50 Euro
3. 100 Euro
4. 500 Euro
5. more than 500 Euro
As soon as the voters have finished the survey, their answers have been stored and their account has been inactivated to avoid multiple voting from same users.

**Outcome**

The reply to the first three questions of the survey is summarized in the following graphics.

Which criteria does your institution consider to estimate the rupture risk of AAAs?

- Maximum diameter of the AAA. 94.1%
- Expansion rate of the AAA. 92.1%
- Growth of the IIT. 6.1%
- High blood pressure. 35.0%
- High mechanical stress in the AAA. 15.9%
- Others. 13.0%

Do you think the rupture risk of AAAs is reliable predicted by the criteria your institution considers?

- Reliable in 100% of all cases. 3.3%
- Reliable up to 99% of all cases. 2.0%
- Reliable up to 95% of all cases. 10.0%
- Reliable up to 90% of all cases. 29.2%
- Reliable up to 75% of all cases. 38.4%
- Reliable up to 50% of all cases. 11.5%
- Not reliable at all. 5.6%

Do you know about biomechanical criteria to estimate AAA rupture?

- Yes, and I'm familiar with biom. criteria. 17.9%
- Yes, but I'm not familiar with biom. criteria. 62.9%
- No, I have never heard about biom. criteria. 19.2%

The answers to the remaining questions are confidential, and hence, not available here.