SUPPLEMENTAL MATERIAL

Table S1. Research strategy.

1. Exp Aortic Aneurysm, Thoracic/

2. Exp Aneurysm, Ruptured/

3. ((thoracoabdominal or thoraco-abdominal or thorax or thoracic) adj3 (aneurysm or dilated or ectasia) adj3 (aorta or aortic)).ti,ab,kw.

4. 1 or 2 or 3

5. Incidence/ or incidence.ti.ab.kw.

6. Epidemiologic studies/

7. Cohort studies/ or cohort.ti.ab.kw.

8. Prevalence/ or prevalence.ti.ab.kw

9. 5 or 6 or 7 or 8

10. 4 and 9

11. Exp animals/ not humans.sh.

12. 10 not 11

Figure S1. Risk of Bias – CASP cohort study checklist.

	1. Are the results of the study valid?	2. Was the cohort recruited in an acceptable way?	3. Was the exposure accurately measured to minimise bias?	4. Was the outcome accurately measured to minimise bias?	5. a) Have the authors identified all important confounding factors – age, smoking, hypertension	5. b) Have they taken account of the confounding factors in the design and/or analysis?	9. Do you believe in the results?	10. Can the results be applied to the local population?	11. Do the results of this study fit with other available evidence?	Overall risk of bias: high or low
Larsson 2011[15]	L	L	L	L	H	H	L	L	L	H
Chaer 2012[4]	L	L	L	L	L	H	L	L	L	L
Takigawa 2012[18]	L	H	U	L	H	H	L	L	L	H
Agricola 2013[14]	L	H	U	H	H	H	L	L	L	H
Wallinder 2018[17]	L	L	L	L	H	H	L	L	L	H
Dombrowski 2019[16]	L	L	L	L	L	H	L	L	L	L

Original CASP items	Adapted CASP items	Reasons for downgrading
1. Did the study address a clearly focused issue?	1. Did the study address a clearly focused issue?	
2. Was the cohort recruited in an acceptable way?	2. Was the cohort recruited in an acceptable way?	Not including every AAA with a diameter equal or higher than 30mm
3. Was the exposure accurately measured to minimise bias?	3. Was the exposure accurately measured to minimise bias?	No clear explanation of how the diagnosis of AAA was obtained
4. Was the outcome accurately measured to minimise bias?	4. Was the outcome accurately measured to minimise bias?	Did not use either chest MR or CT to diagnose a TAA
5. (a) Have the authors identified all important confounding factors?	5. (a) Have the authors identified all important confounding factors – age, smoking, hypertension	These risk factors have not been identified and quantified in the overall cohort and outcome group
5. (b) Have they taken account of the confounding factors in the design and/or analysis?	5. (b) Have they taken account of the confounding factors in the design and/or analysis?	No adjustment has been made for confounding factors (age, smoking, hypertension)
6. (a) Was the follow up of subjects complete enough?	Not used – not applicable	
6. (b) Was the follow up of subjects long enough?	Not used – not aplicable	
7. What are the results of this study?	Not used – not applicable (open question format)	
8. How precise are the results?	Not used – not applicable (open question format)	
9. Do you believe the results?	9. Do you believe the results?	No clear definition of TAA and methods used for diagnosis are provided
10. Can the results be applied to the local population?	10. Can the results be applied to the local population?	The population is not a valid cohort for AAA patients in a hospital/community setting
11. Do the results of this study fit with other available evidence?	11. Do the results of this study fit with other available evidence?	The results are not in concordance with the overall available data regarding synchronous TAA and AAA
12. What are the implications of this study for practice?	Not used – not applicable (open question format)	

Risk of Bias using CASP cohort study checklist[13]. H: High risk of bias; U: Unclear risk of bias; L: Low risk of bias. This tool was adapted from the CASP cohort study checklist, in which we used 9 out of the 14 original items. The table below shows the changes made and what was considered to downgrade the risk of Bias.