New Insights Into Long-Term Reintervention And AAA Rupture Rates After EVAR

From The SVS Vascular Quality Initiative

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Disclosures

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Reintervention after EVR

• Many patients who undergo endovascular AAA repair will also undergo reintervention
• How patient-level factors affect the rate of reintervention is poorly described

Objective

To identify factors associated with reintervention after EVR in a large real-world cohort

All Patients After EVR 2003-2015

Vascular Quality Initiative (VQI)
All Patients After EVR 2003-2015

Vascular Quality Initiative (VQI)  
Medicare Claims

Linked at the patient level:  
95% matching success

All Patients After EVR 2003-2015

Vascular Quality Initiative (VQI)  
Medicare Claims

VQI-Medicare
n=13,995

Missing Data
n=1,084

Final Cohort
n=12,991

Reintervention
Late Rupture

Definition of Outcomes

• Reintervention in Medicare claims
• Any procedure related to the aneurysm or the aneurysm repair after discharge from the index EVR hospitalization

From the Society for Vascular Surgery

A comparison of reintervention rates after endovascular aneurysm repair between the Vascular Quality Initiative registry, Medicare claims, and chart review

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Definition of Outcomes

- Reintervention in Medicare claims
- Any procedure related to the aneurysm or the aneurysm repair after discharge from the index EVR hospitalization

92% sensitivity
96% specificity to identify reinterventions

EVR Patients: n=12,911

Mean Age (SD) 76 (7)
Female 20%
Black 4%

Aneurysm size
<5.0 cm 16%
5.0-5.4 cm 30%
5.5-5.9 cm 24%
6.0+ cm 30%

Urgency
Elective 89%
Symptomatic 7%
Ruptured 4%

Late rupture in Medicare claims
- Any AAA rupture claim with an associated reintervention or death event within 14 days
EVR Patients: n=12,911
Mean Age (SD) 76 (7)
Female 20%
Black 4%
Aneurysm size
<5.0 cm 16%
5.0-5.4 cm 30%
5.5-5.9 cm 24%
6.0+ cm 30%
Urgency
Elective 89%
Symptomatic 7%
Ruptured 4%

5 Year Rate of Reintervention

Rate of Reintervention Stratified by Urgency

11/14/2018
Rate of Reintervention Stratified by Urgency

- **Ruptured:** 27%
- **Symptomatic:** 25%
- **Elective:** 20%

Rate of Reintervention Stratified by AAA Size

- **6+ cm:** 27%
- **5.5-5.9 cm:** <20%
- **5.0-5.4 cm:** <20%
- **<5.0 cm:** <20%

Rate of Reintervention Stratified by Race

- **White:** 20%
- **Black:** 20%
- **Other:** <20%
Rate of Reintervention Stratified by Race

- Black: 31%
- White: 20%
- Other: 24%

Log-rank p<0.001

Rate of Reintervention Stratified by Sex

- Female: 21%
- Male: 21%

Log-rank p=0.17

Rate of Reintervention Stratified by Age Group

Log-rank p=0.10

Late Rupture After EVR
Late Rupture After EVR

5 Year Rate: 3%

Limitations

• Analysis was limited to Medicare patients
• Not all reinterventions are of equal magnitude

Summary

• One in five Medicare patients will undergo reintervention after EVR at 5 years
• Reinterventions occur at a rate of 3-4% per year and do not appear to plateau out to a decade

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• One in five Medicare patients will undergo reintervention after EVR at 5 years
• Reinterventions occur at a rate of 3-4% per year and do not appear to plateau out to a decade
• Urgent operations, black patients, and those with large aneurysms have an even higher rate of reintervention and should receive diligent postoperative surveillance
Implications

• Reintervention is common, while late rupture is not; how these factors effect late rupture is not known

• Better describing the factors associated with reintervention after EVAR may assist patients considering AAA repair

Thank You

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