Surveillance Compliance after EVAR:
Non-compliance has worse outcomes –
but what can we do to improve it?

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44th Annual VEITH Symposium.

EVAR Surveillance
• Lifelong surveillance recommended by SVS
• DU suitable for surveillance instead of CT?
  *as good as CT-A
  (Beeman, Dougherty, Calligaro, et al. JVS 2009;50:1019-24)
  (Beeman, Dougherty Calligaro, et al. JVS 2010;52:1147-1152)
*do not routinely obtain CT-A
  (Blom, Troutman, Beeman, Dougherty, Calligaro.
  JVS 2012;55:1577-80)
  (Troutman, Dougherty, Calligaro, et al. JVS 2014;60:358-62)

Does EVAR surveillance matter > 1 year?
Type II endoleaks (462 EVARs)

<table>
<thead>
<tr>
<th></th>
<th>≤ 1 yr</th>
<th>≥ 1 yr</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolved</td>
<td>75% (49/65)</td>
<td>29% (9/31)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Intervention</td>
<td>8% (5/65)</td>
<td>55% (17/31)</td>
<td>&lt;0.0001</td>
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(Pineda, Tyagi, Troutman, Dougherty, Calligaro. JVS in press)

Does EVAR surveillance matter > 5 years?
156 EVARs

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<tr>
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<th>≤ 5 yrs</th>
<th>&gt; 5 yrs</th>
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<tr>
<td>Intervention</td>
<td>22% (34)</td>
<td>6% (10)</td>
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(Pineda, Phillips, Calligaro, Krol, Dougherty, Troutman, Dietzek.
JVS 2017;66:392-5)

EVAR Surveillance
Why are patients not compliant?
• Analyzed 144 EVAR patients
• 25 patient variables
• Vascular registry, patient charts,
telephone questionnaire

(Tyagi, Calligaro, Pineda, Zheng, Troutman, Dougherty.
JVS - submitted)
EVAR Surveillance
– DU in our accredited NIVL
  One week, six months, then annually
  Increased frequency if type II endoleak

– CT-A obtained if
  > 0.5 mm diameter sac growth
  Type I endoleak
  Failing/stenotic graft limb

Results of compliance with our protocol?

EVAR Surveillance - Compliance
Estimated compliance at 3 years post-EVAR
= 70% ± 6%  
(Kaplan-Meier analysis)

Estimated 5-year survival rate:
Compliant group = 83%
vs.
Non-compliant group = 34%
(p < 0.001)

Why did compliant patients have better survival – more aneurysm-related deaths in non-compliant group?

NO!!!

EVAR Surveillance - Compliance
• Compliance
  Predicted by patient satisfaction with vascular surgeon and hospital care
• Non-compliance
  Predicted by stroke & CHF during follow-up  
  (multivariate Cox regression analysis)

No other variables
(postop complications, distance from hospital) predicted compliance

Summary #1
How do we increase compliance with post-EVAR surveillance and follow-up?

Be nice to patients!
(give lollipops, tell jokes, etc)
Summary #2

• Non-compliant patients had decreased survival (34% at 5 years)
• Should we say “If you don’t come back for DU surveillance, you’ll die”???
• Deaths and non-compliance with post-EVAR surveillance most likely due to disabling chronic illness - stroke, CHF, etc

Conclusion

Although patient satisfaction with surgeon and hospital leads to increased compliance (*be nice!*), non-compliance is associated with sick or dying patients.

We can try – but it may not make a difference