IVC filter retrieval program effects on retrieval rates and number of patients lost to follow-up
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Aliaksei Salei, MD; Joel Raborn, MD; Padma P. Manapragada, MD; Ahmed Kamel Abdel Aal, MD/PhD; AJ Gunn, MD
Inferior vena cava (IVC) filters are an established method of preventing pulmonary embolism (PE) in patients with deep venous thrombosis (DVT) or risk factors who cannot be anti-coagulated.

Despite an overall good safety profile, IVC filters can lead to complications.
IVC filters are not benign

- FDA placed the long-term safety profile of IVC filters under increasing scrutiny due to potential complications after reviewing adverse events reported over a 5 year period.
- FDA recommends implanting physicians should be responsible for the subsequent care of patients with retrievable IVC filters.
- Filter retrieval rates have been historically low.
Purpose

To assess the efficacy of a dedicated IVC filter retrieval program on filter retrieval rate and number of patients lost to follow-up
Filter retrieval program

Retrieval filter placed

Patient placed on list in EMR & scheduled for IR appointment

No show for appointment

Follow up appointment

1. Re-schedule with patient
2. Letter sent to patient & doctor if unable to contact

1. Filter out
2. Filter in
3. Follow up
Materials and Methods

• To assess efficacy of the program, we reviewed the records of all the patients with retrievable IVC filters placed by IR 9 months prior to and 9 months after the program initiation.

• Student’s t-test was used for statistical analysis.

• A p value of < 0.05 was considered statistically significant.
Prior to program initiation

- 76 patients (31M, 45F) had retrievable filters placed during 9 months
- Mean age: 64.2 years (range: 20-89)
- 80.2% were placed due to contraindications to anticoagulation
  - Prophylactic placement and massive PE with residual DVT were the next highest indications

![Indications for IVC filter placement]

- Contraindication to anticoagulation
- Other
Prior to program initiation

Follow-up

• 5 filters were removed (6.6%)
• 42 patients were lost to follow-up (55.3%)
• 22 patients died (28.9%)
• 7 filters were deemed permanent by physicians after placement (9.2%)
• All 5 retrievals were successful without complications
After program initiation

- 106 (54M, 52F) patients had retrievable filters placed during 9 months
- Mean age: 58.8 years (range: 26-90)
- 81.1% were placed due to contraindications to anticoagulation
  - Complications from anti coagulation and failure of anticoagulation were the next most common indications

Indications for IVC filter placement

- Contraindication to anticoagulation
- Other
After program initiation

Follow-up:

• Attempted retrieval in 29 patients (27.4%)
  • One attempt unsuccessful so actual rate: 26.4%
• 10 patients were lost to follow-up (9.4%)
• 23 patients died (21.7%)
• 27 filters were deemed permanent by a physician after placement (25.4%)
• Decisions were still pending in 17 patients (16%)
Results

<table>
<thead>
<tr>
<th>Category</th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retrieval rate</td>
<td>6.6%</td>
<td>26.4%</td>
</tr>
<tr>
<td>p=0.0006</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lost to follow-up</td>
<td>55.3%</td>
<td>9.4%</td>
</tr>
<tr>
<td>p&lt;0.0001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patients expired</td>
<td>28.9%</td>
<td>21.7%</td>
</tr>
<tr>
<td>p&lt;0.0001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filters deemed permanent</td>
<td>9.2%</td>
<td>25.4%</td>
</tr>
<tr>
<td>Decision pending</td>
<td>0.0%</td>
<td>16.0%</td>
</tr>
</tbody>
</table>
Discussion

• Filter retrieval program is effective at *increasing accountability* for IVC filters
  • 55.3% vs. 9.4% of patients lost to follow up

• Filter retrieval program is *effective in improving filter retrieval rates*
  • 6.6% vs. 26.4% (p=0.0006)
Summary

Dedicated filter retrieval program is effective in increasing filter retrieval rate and decreasing the number of patients lost to follow-up.
Comments or questions?

Please feel free to contact us via email at agunn@uabmc.edu, asalei@uabmc.edu, or pmanapragada@uabmc.edu

Via twitter at: @ajgunnmd or @uab_ir