1. Pathology Background

**Cerebral Aneurysms** are abnormally weakened, distended areas of blood vessels, usually arteries, in the head.

- **5 - 10%** of Americans have unruptured cerebral aneurysms
- **0.5 – 2%** of ruptures annually causing subarachnoid hemorrhage
- **65%** of ruptures may result in major mortality and mortality

**Who's At Risk?**
Patients who are elderly, female, genetically predisposed, or have a history of tobacco use or hypertension. Regularly taking aspirin or statins may decrease risk of aneurysm development and rupture.

2. Treatment Background

Patients usually have better outcomes with clipping than coiling, including less morbidity and mortality, shorter hospital stays, and less rehabilitation.

- **13%** Craniotomy and clip
- **87%** Angiography-assisted endovascular coil, stent, or embolization

3. Objectives

**Purpose:** To identify specific patient and procedural characteristics that predict aneurysm development and treatment outcomes, and aid physicians in choosing appropriate treatment for patients’ unique circumstances

**Database Cohort:** Patients with developing or ruptured cerebral aneurysms seen by Dr. Robert J. Singer at Dartmouth Hitchcock Medical Center between June 2013 - July 2015

4. Cohort Demographics & Variables

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Untreated</th>
<th>Coil</th>
<th>Clip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (yrs)</td>
<td>65.0 (19.2)</td>
<td>66.0 (19.1)</td>
<td>63.0 (19.2)</td>
</tr>
<tr>
<td>Gender Female</td>
<td>118 (74.2)</td>
<td>67 (49.7)</td>
<td>51 (49.6)</td>
</tr>
<tr>
<td>Male</td>
<td>41 (25.8)</td>
<td>66 (50.3)</td>
<td>56 (50.4)</td>
</tr>
<tr>
<td>AR Aneurysm</td>
<td>19 (14.9)</td>
<td>20 (14.4)</td>
<td>19 (18.9)</td>
</tr>
<tr>
<td>PCA Aneurysm</td>
<td>13 (10.2)</td>
<td>12 (8.9)</td>
<td>11 (10.8)</td>
</tr>
<tr>
<td>Right Sided</td>
<td>2.0 (1.7)</td>
<td>1.5 (1.0)</td>
<td>1.0 (0.9)</td>
</tr>
<tr>
<td>Frontal</td>
<td>2.0 (1.6)</td>
<td>1.0 (0.7)</td>
<td>1.0 (0.9)</td>
</tr>
<tr>
<td>Dorsal</td>
<td>2.0 (1.5)</td>
<td>1.0 (0.7)</td>
<td>1.0 (0.9)</td>
</tr>
</tbody>
</table>

**Why clinical research?**
By seeking to understand how patient demographics and delivery of health care impact patient outcomes, medical research can improve physician practice, standards of care, and patient health.

**Selected References**


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