A retrospective review of SRS for ARUBA-eligible BAVMs at a single centre

Lucas Vasas, BSc.
Anthony M. Kaufmann, MD, BSc. (Med), MSc, FRCSC
Conflict of Interest Disclosure

A retrospective study of SRS for ARUBA eligible BAVMs at a single centre

- No conflicts of interest relevant to the subject matter of this presentation
Should we treat brain arteriovenous malformations? (BAVMs)

- Study Objective:
  - To determine whether medical management is superior to interventional therapy for prevention of death from any cause or symptomatic stroke in previously unruptured BAVMs
- Study stopped at 72 months due to safety concerns.
- Medical Group (n=110): death or stroke in 10%
- Interventional Group (n=116): death or stroke in 30%
## ARUBA Interventions

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Number of Patients Receiving Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neurosurgery Alone</td>
<td>5</td>
</tr>
<tr>
<td>Radiosurgery Alone</td>
<td>31</td>
</tr>
<tr>
<td>Embolization Alone</td>
<td>30</td>
</tr>
<tr>
<td>Embolization with Neurosurgery</td>
<td>12</td>
</tr>
<tr>
<td>Embolization with Radiosurgery</td>
<td>15</td>
</tr>
<tr>
<td>Embolization, Radiosurgery, and Neurosurgery</td>
<td>1</td>
</tr>
</tbody>
</table>

- Majority of patients receiving embolization, which has higher risks and lower efficacy compared to SRS.
Our Study: Outcomes of SRS

- Reviewed 67 ARUBA eligible patients who were treated by SRS at the Health Sciences Centre in Winnipeg, MB, Canada.
- Minimum 1 year follow-up.
- Patient and BAVM characteristics comparable between our study and ARUBA.
- Compared complication rates with ARUBA results and determined obliteration rate of BAVMs with SRS.
# Patient Characteristics and AVM Size

## Our Study
- Women = 34 (50.7%)
- Mean Age = 45

<table>
<thead>
<tr>
<th>Size</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 3 cm</td>
<td>53</td>
<td>79.1%</td>
</tr>
<tr>
<td>&lt; 3, &lt; 6 cm</td>
<td>13</td>
<td>20.5%</td>
</tr>
<tr>
<td>&gt; 6 cm</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

## ARUBA

### Med. Mgmt.
- Women = 44 (40%)
- Mean Age = 44
- < 3 cm = 60 (55%)

### Interventional
- Women = 48 (42%)
- Mean Age = 45
- < 3 cm = 78 (68%)
Results

- Primary outcome of stroke/death = 6%
  - Other transient complications in 16% of patients
- **84% obliteration rate** in patients with 5 years or more of follow-up.

ARUBA Medical Group
- 10% risk of stroke or death

ARUBA Interventional Group
- 30% risk of stroke or death

Radiosurgery at Our Centre
- 6% risk of stroke (no deaths)
SRS is a safe and effective treatment option for BAVMs, favourable to the natural history of the disease.
THANK YOU

The Neurosurgery Team and Radiosurgery Staff
Dr. Anthony M. Kaufmann
Dr. Anita Berndt
Olive Cotroneo
Andrea Kinnear
Kim Chell