Estimating the extent of postthrombotic iliocaval obstructions prior to endovascular recanalization –

a comparison of different imaging modalities

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Disclosure

Speaker name:
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I have the following potential conflicts of interest to report:

☐ Consulting
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)

☒ I do not have any potential conflict of interest
VIDIO trial

Substantial differences in diagnostic accuracy between venography and IVUS

In 26%, IVUS detected significant lesions not identified by venography

Based on IVUS, investigator revised the treatment plan in 57 of 100 patients
Aims

- Comparison of duplex ultrasound (DUS), MR-venography (MRV) and angiography (Angio) with intravascular ultrasound (IVUS; used as reference)

- Comparing number of affected venous segments:
  - Inferior vena cava (VCI)
  - Common iliac vein (CIV)
  - External iliac vein (EIV)
  - Common femoral vein (CFV)

- Degree of obstruction (patent, stenosis, occlusion), lesion length (cm)
Study population

Patients with chronic postthrombotic lesions (n=54)

Median age 44 (IQR 29 - 53)

Female sex (32/54; 59%)
Results

Angio showed the highest concordance with IVUS

DUS better than MRV for the EIV and the CFV

MRV better than DUS for the CIV and IVC
## Results – disease extent

<table>
<thead>
<tr>
<th></th>
<th>Cohen’s Kappa</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DUS and IVUS</strong></td>
<td></td>
<td></td>
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<tr>
<td>IVC</td>
<td>0.40</td>
<td>0.14 – 0.67</td>
</tr>
<tr>
<td>CIV</td>
<td>0.23</td>
<td>0.05 – 0.41</td>
</tr>
<tr>
<td>EIV</td>
<td>0.68</td>
<td>0.43 – 0.93</td>
</tr>
<tr>
<td>CFV</td>
<td>0.38</td>
<td>0.13 – 0.62</td>
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<tr>
<td><strong>MRV and IVUS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IVC</td>
<td>0.49</td>
<td>0.23 – 0.76</td>
</tr>
<tr>
<td>CIV</td>
<td>0.45</td>
<td>0.13 – 0.78</td>
</tr>
<tr>
<td>EIV</td>
<td>0.58</td>
<td>0.32 – 0.84</td>
</tr>
<tr>
<td>CFV</td>
<td>0.24</td>
<td>0.08 – 0.40</td>
</tr>
<tr>
<td><strong>Angio and IVUS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IVC</td>
<td>0.63</td>
<td>0.40 – 0.87</td>
</tr>
<tr>
<td>CIV</td>
<td>0.56</td>
<td>0.22 – 0.90</td>
</tr>
<tr>
<td>EIV</td>
<td>0.92</td>
<td>0.77 – 1.00</td>
</tr>
<tr>
<td>CFV</td>
<td>0.39</td>
<td>0.17 – 0.60</td>
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</table>
Results – lesion length and severity
Conclusion

For noninvasive assessment of postthrombotic iliocaval and iliofemoral venous obstruction, a combination of MRV and DUS offers best agreement with IVUS.

Regarding invasive assessment, Angio underestimated stenosis-severity by up to 30% in the majority of patients with significant venous obstruction.

For assessment of disease extent during endovascular recanalization of iliocaval and iliofemoral venous obstructions IVUS is the gold standard.
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