Publication Brief

AV Access Flow Measurement: Comparing Fresenius Conductivity Method to Transonic Ultrasound Dilution

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INTRODUCTION
This study compared Transonic® ultrasound dilution technique and Fresenius conductivity technique in 145 patients with AV fistulae on two consecutive weeks.

STUDY
- 145 patients with AV fistulae were measured with each technique on the same day of the week for two consecutive weeks.
- 290 paired readings were analyzed

REPORTED RESULTS

<table>
<thead>
<tr>
<th># Readings</th>
<th>% Fresenius QA within 10% of Transonic QA</th>
<th>% Fresenius QA Not within 20% of Transonic QA</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>290</td>
<td>43%</td>
</tr>
<tr>
<td>0-660 mL/min</td>
<td>73</td>
<td>48%</td>
</tr>
<tr>
<td>661-928 mL/min</td>
<td>72</td>
<td>35.5%</td>
</tr>
<tr>
<td>929-1323 mL/min</td>
<td>73</td>
<td>20%</td>
</tr>
<tr>
<td>1324-2000 mL/min</td>
<td>72</td>
<td>42%</td>
</tr>
</tbody>
</table>

STUDY'S CONCLUSION
The difference between Transonic® and Fresenius measurements was large across all measurement ranges. “The Fresenius method of measurement of AV fistula QA does not reliably reproduce the QA measured by the Transonic® method.”

TAKE HOME POINTS:
1. FRESENIUS CONDUCTIVITY ACCESS FLOW MEASUREMENTS IN AV FISTULAS DO NOT CORRELATE WITH TRANSONIC® FLOW-QC ACCESS FLOW MEASUREMENTS ACROSS THE ENTIRE RANGE OF ACCESS FLOW READINGS.
   - The majority of Fresenius measurements (57.2%) were more than 10% different from Transonic® access flow measurements.
   - 28.4% of Fresenius measurements were more than 20% different from Transonic® access flow measurements.
2. FRESENIUS MEASUREMENTS WERE NOT REPRODUCIBLE.
   - 46% (67 out of 145) of Fresenius access flow measurements varied more than 20% between Week 1 and Week 2 of the study.
3. TRANSONIC® ULTRASOUND DILUTION IS THE “CURRENT” GOLD STANDARD.
   - Abstract states that Transonic® is the Gold Standard.

Reference: