Good Early Results Of Negative Pressure Wound Non-Excisional Treatment For Prosthetic Graft Infection Are Durable: It Is A Game Changer

*Techniques And Long-Term Results*

Zoran Ranovic, Dieter O. Mayer
Bruno Ledergerber, Alexia Anagnostopoulou,
Mario Lachat*, Barbara Hasse*

**VASGRA**: Prospective observational cohort of patients after vascular graft surgery

Interdisciplinary approach

Vascular surgery, Infectious Disease Service, Microbiology, Radiology, Surgical Pathology

**Intention-to-treat: Multi-staged Negative Pressure Wound Therapy (NPWT)**

61 year-old male: Szilagyi III EVAR infection

No Disclosures
61 year-old male: Szilagyi III EVAR infection

Biofilm breakdown: Local instillation of antiseptics

VAC VestaFlo TM

Study details and methods

Data sources:
- Prospective data: 73 patients with PVGI diagnosed from April 2012 until July 2016
- Analyses of combined dataset since characteristics and mortality comparable

Definitions:
- Baseline: End of Surgical treatment after diagnosis of PVGI
- Outcome: End of antibiotic treatment (cure from infection)

Analyses:
- Kaplan-Meier curves and Cox proportional hazards regression

Baseline characteristics of 170 patients with PVGI

<table>
<thead>
<tr>
<th></th>
<th>With NPWT (n=117)</th>
<th>Without NPWT (n=53)</th>
<th>Overall (n=170)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male gender</td>
<td>91 (78%)</td>
<td>38 (72%)</td>
<td>129 (76%)</td>
<td>0.39</td>
</tr>
<tr>
<td>Age (years median IQR)</td>
<td>63 (59-77)</td>
<td>65 (55-70)</td>
<td>67 (59-75)</td>
<td>0.077</td>
</tr>
<tr>
<td>BMI (kg/m²) (median IQR)</td>
<td>25 (23-28)</td>
<td>27 (23-28)</td>
<td>25 (23-28)</td>
<td>0.22</td>
</tr>
<tr>
<td>Charlson Comorbidity Index (median IQR)</td>
<td>3 (1-5)</td>
<td>3 (1-4)</td>
<td>3 (1-6)</td>
<td>1.87</td>
</tr>
<tr>
<td>Endovascular Graft</td>
<td>23 (20%)</td>
<td>6 (11%)</td>
<td>29 (17%)</td>
<td>0.18</td>
</tr>
<tr>
<td>Duration of Hospitalization (days, median IQR)</td>
<td>5 (3-8)</td>
<td>3 (2-6)</td>
<td>5 (3-7)</td>
<td>0.0014</td>
</tr>
<tr>
<td>Death all cause</td>
<td>45 (38%)</td>
<td>14 (28%)</td>
<td>59 (35%)</td>
<td>0.16</td>
</tr>
<tr>
<td>Death infect-related</td>
<td>9 (8%)</td>
<td>6 (11%)</td>
<td>15 (9%)</td>
<td>0.36</td>
</tr>
<tr>
<td>Number of NPWT changes (median IQR)</td>
<td>7 (4-12)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Use of multi-staged procedures with repetitive NPWT for all types of PVGI

NPWT application by graft location

NPWT application by surgical intervention
NPWT appears to be significantly associated with faster cure.

Time to cure from PVGI:
NPWT aHR 1.8 (95% CI 1.2-2.8)

Mortality

117 99 92 75 56
NPWT

117 99 92 75 56
No NPWT

Number at risk

0 3 6 12 24
Time since hospital discharge (months)

NPWT No NPWT

Univariable HR (95% CI)
P value

Multivariable HR (95% CI)
P value

NPWT 1.6 1.0-2.4 0.039 1.8 1.2-2.8 0.009
Age per 10y 0.93 0.81-1.1 0.254 0.90 0.79-1.0 0.129
Female 1.5 0.95-2.2 0.087 1.6 1.0-2.5 0.035

Conclusion

- Explant after downgrading better results
- Instillation for biofilm break down
- Low mortality
- Good QoL

61-year old male

Vontobel Foundation
Rozalia Foundation