The concept to treat AGI

- Complete removal of the infected graft
- Extensive wound debridement
- Local measures (hypochloric acid)
- Systemic antibiotic treatment
- Biological safeguarding with vital tissue
- The silver/triclosan protected graft or pericard graft

The new concept to treat AGI

- Multistage procedure (NPWT)
- Complete or partial removal of the graft or preservation
- Hypoosmolar solution of hypochloric acid (effective also against MRSA, VRE, 4 MRGN and fungi)
- Silver Triclosan is not available in the U.S.

DISCLOSURES

- Travel support by Maquet/Getinge Group
- Paid speaker on special events
- Nothing related to my presentation

Avoids too much surgery...
A new additional concept to treat ASGI?
- multistage procedure (NPWT)
- complete removal of the infected stent graft
- Downgrading if used before stent explantation and in situ repair?
- local measures (hypochloric acid)
- systemic antibiotic treatment
- in-situ repair: The silver/triclosan protected graft or pericard graft
- biological safeguarding with vital tissue

What is Plasma?
- The 4th state of matter and is a charged gas.

Efficacy against gram-positive bacteria
- Staphylococcus aureus
  - 60 s
  - 120 s

Efficacy against gram-negative bacteria
- Pseudomonas aeruginosa
  - 60 s
  - 120 s

Staph. aureus

Adtec SteriPlas

Perfectus Biomed

Adtec - Argon

In Situ Repair Of Infected Prosthetic Arterial Grafts: New Techniques And Possibilities In The Era Of NPWT
Max Zegelman
DIRECTOR VASCULAR AND THORACIC SURGERY
Krankenhaus Nordwest
and ADZ- Bürgerhospital Frankfurt/Main
New York, 2017

Cold plasma: A new tool?
Not available in the U.S.
T. E., female 90 years, ulcer for 12 month

T. E., female 90 years, ulcer closed after 4 weeks of treatment

K. C., female, 88 years

**Rotering H. / Münster**

Cold atmospheric plasma

**CAP-Treatment of infected LVAD-systems**

<table>
<thead>
<tr>
<th>Patient</th>
<th>Site</th>
<th>Age</th>
<th>Localization</th>
<th>Species</th>
<th>Treatment time</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. H.</td>
<td>M</td>
<td>69</td>
<td>Pump pocket</td>
<td>Staphylococcus aureus</td>
<td>2 weeks</td>
<td>Complete healing</td>
</tr>
<tr>
<td>M. K.</td>
<td>M</td>
<td>72</td>
<td>Thrombosis</td>
<td>Staphylococcus aureus</td>
<td>6 weeks</td>
<td>Ongoing healing</td>
</tr>
<tr>
<td>S. P.</td>
<td>M</td>
<td>77</td>
<td>Infection</td>
<td>Pseudomonas aeruginosa</td>
<td>7 weeks</td>
<td>Healing nearly completed</td>
</tr>
<tr>
<td>S. H.</td>
<td>F</td>
<td>61</td>
<td>Chronic</td>
<td>Klebsiella pneumoniae</td>
<td>2 weeks</td>
<td>Complete healing</td>
</tr>
<tr>
<td>S. H.</td>
<td>F</td>
<td>49</td>
<td>Thrombosis</td>
<td>Staphylococcus aureus</td>
<td>2 weeks</td>
<td>Complete healing</td>
</tr>
<tr>
<td>S. H.</td>
<td>M</td>
<td>64</td>
<td>Infection</td>
<td>Pseudomonas aeruginosa</td>
<td>6 weeks</td>
<td>Abscess via reduction</td>
</tr>
</tbody>
</table>

No alteration of mechanical stability (ISO 7198:2015)

Coated and uncoated polyester prostheses (Maquet/Getinge)

Dry and wet 2 x 5 or 2 x 10 min

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Think about the staged procedure in acute infection... We are on the way to use plasma in acute graft infections...