New Developments In The Treatment Of Aortic Graft Infection: How Do Silver Impregnated Grafts And Negative Wound Pressure Help To Preserve Infected Grafts And When Won’t These Measures work

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For the Commission “Hygiene and Infections in Vascular Surgery”
of the German Society of Vascular Surgery DGG

DISCLOSURES

The concept to treat AGI
- complete removal of the infected graft

Challenging for the patient and the surgeon
RIR: Complete removal 8%, RIR: Partial removal 35%
Pubka, Blads, Zegelman (silveracetate)

Silver and Triclosan – Modes of Actions

- 4 + 2 principle

Silver and Triclosan

Cell wall
- Thrombin induces fibrinolytic and platelet aggregation
- Decrease in cell wall permeability andochondrosis

Structural Elements
- Thrombin induces platelet adhesion
- Protein induction of fibrinogen deposition

Cytokines
- Induce inflammatory and antibody response

Cellulocytosis
- Induce inflammatory and antibody response

Fatty Acid Synthase
- Induce inflammatory and antibody response

DNA
- Induce inflammatory and antibody response

Proteins
- Induce inflammatory and antibody response

Silver plus triclosan:
- Impregnation with silveracetate and triclosan (CE marked 2012)
- InterGard Synergy (Maquet)
- Product is not available in the US

Long-Term Results of Vascular Graft and Artery Preserving Treatment With Negative Pressure Wound Therapy in Szilagyi Grade III infections Justify a Paradigm Shift

Dietter Mayer, MD,1 Barbara Haus, MD,1 Joanne M. Koehler, MD,1 Markus Enders, MD,1
Frank J. Wal, MD,1,3 Green Runcie, MD, PhD,1 and Marco Larch, MD,1
Ann Surg 2011; 254:754–760
The new concept to treat AGI

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

This multistage procedure is convenient for the surgeon and avoids excessive surgical manipulation and burden to the patient, since the in situ repair will easier to be performed if the infected graft was already liberated from surrounding connective tissue. Furthermore, the new graft will then be implanted in a microbiologically improved wound bed.

Improved chance of graft preservation
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One stage procedure in graft infection

Bleeding/rupture of the anastomosis
Infected stent grafts
Concern: Reimbursement?

Take Home Message (2)

Vascular Graft Infections
New Aspects: Pericardium

Product is not available in the US
Compassionate use in Europe
10 patients with AGI and multistage procedure since 2013

- 1 + (MI)
- No reinfection
- Partial or complete graft preservation n:4

**Time for a paradigm shift?**