

1 **Supplementary data**

2 **Supplementary Figure 1. Competing risk of cumulative incidence of treatment failure in**
 3 **patients with complex chronic PJI managed by a two-stage revision procedure. A)**

4 Competing risk of cumulative incidence of treatment failure (red), mortality (blue) and alive
 5 without treatment failure (green) in overall patients. **B)** Competing risk of cumulative
 6 incidence of treatment failure (red), mortality (blue) and alive without treatment failure
 7 (green) in patients according to second-stage microbiological outcome.

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9 **Supplementary Table 1. Time-to-positivity of positive samples collected at the second-**
 10 **stage surgery of PJI.**

Bacterial documentation	n	Time-to-positivity	
		(hours)*	(Min-Max)
MSSA	3	41	(24-72)
MRSA	1	24	-
<i>Staphylococcus epidermidis</i>	3	51	(24-96)
<i>Staphylococcus capitis</i>	1	31	-
<i>Staphylococcus warnerii</i>	1	43	-
<i>Cutibacterium acnes</i>	2	104	(21-288)
<i>Corynebacterium sp.</i>	1	48	-

11 MSSA: methicillin-sensitive *Staphylococcus aureus*, MRSA: methicillin-resistant *Staphylococcus aureus*.

12 *Time-to-positivity from samples crushed and enriched in aerobic and anaerobic flasks, cultured on agar media
 13 and in Schaedler broth were retrieved. The latest time-to-positivity of all the above samples is given in hours.

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15 **Supplementary Table 2. Characteristics of patients with treatment failure after a two-**
 16 **stage surgery for complex chronic PJI.**

Patient's characteristics	Patients with treatment failure	
	n	%
Age	72	[68-78]
Male	4	(100)
Comorbidities		

Smoking	0 (100)
Diabetes	1 (25)
Obesity	1 (25)
Osteoarthritis	2 (50)
Immunocompromise*	3 (75)
Cutaneous disease	2 (50)
Prosthesis characteristics	
Recurrent septic failure	3 (75)
Hip	1 (25)
Knee	3 (73)
Identification before surgery	3 (75)
Polymicrobial	1 (25)
MSSA	2 (50)
<i>Streptococcus</i>	2 (50)
Antibiotic before surgery	2 (50)
Antibiotic duration	
First-stage antibiotherapy (weeks)	9 [6-11]
Delay between first and second-stage revision (weeks)	19 [14-29]
Antibiotic-free period (weeks)	12 [8-19]
Second-stage antibiotherapy (days)	26[10-52]
Outcome	
Follow-up (months)	43 [35-47]
Mortality	0 (0)

1 *MSSA: methicillin-sensitive *Staphylococcus aureus*, MRSA: methicillin-resistant *Staphylococcus aureus*,

2 CNS: Coagulase-negative *Staphylococcus*, GNB: Gram-negative bacilli.

3

4 **Supplementary Table 3.** Factors independently associated with antibiotic duration at -

5 reimplantation.

aOR*

95%CI

Osteoarthritis	17	[2.65-153]
Inflammatory disease	0.09	[0.01-0.08]
Treatment failure	3.41	[0.13-172]
Antibiotic-free period	0.89	[0.75-1.03]
Initial documentation with <i>S. aureus</i>	1.17	[0.26-14.9]

1 *Adjusted odd-ratios with 95% confidence intervals are given after adjustment on covariates using logistic
2 regression.

3 aOR : adjusted odds-ratio, 95%CI : 95% confidence interval.

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