

Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work.

eAppendix. Participating study centers in the Netherlands with number of included patients (n).

Academic Medical Center (n=78)
Alrijne Hospital (n=38)
Amphia Hospital (n=25)
BovenIJ Hospital (n=18)
Catharina Hospital (n=34)
Deventer Hospital (n=19)
Flevo Hospital (n=20)
Gelre Hospital (n=7)
Medical Center Alkmaar (n=20)
Medical Center Haaglanden (n=23)
OLVG East (n=20)
OLVG West (n=44)
Red Cross Hospital (n=9)
Reinier de Graaf Hospital (n=1)
Spaarne Hospitals (n=61)
Tergooi Hospitals (n=1)
Vlietland Hospital (n=5)
VU University Medical Center (n=10)
Westfries Gasthuis (n=28)

eTable 1. Growth in culture swabs of patients with SSI^a.

	SSI Cefazolin group (n = 30)		SSI Saline group (n = 36)	
		Growth of microorganism		Growth of microorganism
Patients with culture swab – no./ total no. (%)	19/30 (63.3)		17/36 (47.2)	
Superficial SSI – no. with culture swab / no. with infection (%)	16/29 (55.2) ^b	Cocci 9 <i>Staphylococcus aureus</i> + 1 Coagulase-negative Staphylococci - 2 Hemolytic Streptococcus + 1 <i>Peptoniphilus harei</i> + Rods 1 <i>Enterobacter cloacae</i> - 1 <i>Proteus mirabilis</i> + 1 <i>Pseudomonas putida</i> - Other 2 Skin flora ^ 2 Acinetobacter species -	13/29 (44.8)	Cocci 11 <i>Staphylococcus aureus</i> + 2 Hemolytic Streptococcus + Other 4 Skin flora ^
Deep SSI – no. with culture swab / no. with infection	1/1 (100)	Cocci 1 <i>Staphylococcus aureus</i> +	5/7 (71.4)	Cocci 4 Hemolytic Streptococcus + 3 <i>Staphylococcus aureus</i> + Other 1 No growth ^d

^a Growth of more than one microorganism per culture possible.

^b Missing data in two cases.

+ Sensitive for cefazolin.

- Not sensitive for cefazolin.

^ Not applicable.

^d Culture swab was obtained after start of antibiotic treatment.

n; number, SSI; surgical site infection

eTable 2. Post-hoc exploratory unadjusted subgroup analyses by weight and by type of removal of orthopedic implants concerning the SSI rate by study arm

	Cefazolin group	Saline group*	Interaction test p-value
	No. SSI/No. (%)	No. SSI/No. (%)	Absolute risk difference in % (95% CI)
Weight			p=0.138
<60 kg	1/21 (4.8)	4/18 (22.2)	-17.5 (-43.7 to 8.4)
≥60 kg*	28/192 (14.6)	29/207 (14.0)	0.6 (-6.3 to 7.6)
Type of removal			p=0.629
Kirchner-wire	1/9 (11.1)	2/6 (33.3)	-22.2 (-66.1 to 24.8)
Screw	5/53 (9.4)	8/48 (16.7)	-7.2 (-22.5 to 7.6)
Syndesmotic screw	2/18 (11.1)	2/23 (8.7)	2.4 (-20.3 to 28.4)
Intramedullary nail	1/24 (4.2)	1/11 (9.1)	-4.9 (-38.9 to 15.9)
Plate and screws*	21/124 (16.9)	23/152 (15.1)	1.8 (-6.8 to 10.8)

*Reference category in logistic regression.

CI: confidence interval, SSI: surgical site infection

eTable 3. Patient- and surgical characteristics and association with SSI within 30 days.^{ab}

Possible confounder	SSI (n=66)	No SSI (n=404)	Absolute risk difference in % (95% CI)
Mean duration of surgery (95% CI) – min ^c	36.6 (31.6-41.7)	34.7 (32.7-36.7)	
Substance abuse – no./total no. (%)			
Nicotine use ^d	19/62 (30.6)	99/375 (26.4)	4.2 (-6.9 to 17.3)
Alcohol use ^d	24/62 (38.7)	98/373 (26.3)	12.4 (0.0 to 25.6)
Illegal drug use	5/61 (8.2)	11/373 (2.9)	5.2 (-0.4 to 16.0)
Diabetes mellitus – no./total no. (%)	2/66 (3.0)	10/404 (2.5)	0.56 (-2.8 to 9.1)
Resident performing surgery – no./total no. (%)	49/66 (74.2)	291/403 (72.2)	2.0 (-10.4 to 12.1)
Tourniquet use – no./total no. (%)	13/64 (20.3)	46/398 (11.6)	8.8 (-0.02 to 20.5)
SSI following ORIF – no./total no. (%)	7/62 (11.3)	20/398 (5.0)	6.3 (-0.01 to 16.6)
Median time to implant removal – months (IQR)	12 (8-17)	11 (7-16)	
Location of implant removal ^e – no./total no. (%)			
Fore and/or midfoot	6/66 (9.1)	44/404 (10.9)	-1.8 (-7.7 to 7.9)
Tarsus	5/66 (7.6)	32/404 (7.9)	-0.3 (-6.1 to 9.9)
Ankle	45/66 (68.2)	229/404 (56.7)	11.5 (-1.4 to 22.6)
Lower leg (tibia and/or fibula)	10/66 (15.2)	103/404 (25.5)	-10.3 (-18.4 to 0.9)
Type of implant removal ^e – no./total no. (%)			
Intramedullary nail	2/66 (3.0)	37/404 (9.2)	-6.1 (-10.3 to 2.7)
Syndesmotic screw	4/66 (6.1)	49/404 (12.1)	-6.1 (-11.6 to 3.9)
Screw only	13/66 (19.7)	88/404 (21.8)	-2.1 (-11.0 to 9.7)
Plate and screws	48/66 (72.7)	247/404 (61.1)	11.6 (-1.1 to 22.0)
Kirschner wire ^f	4/66 (6.1)	20/404 (5.0)	1.1 (-3.8 to 9.8)
Incomplete implant removal – no./total no. (%)	17/66 (25.8)	111/404 (27.5)	-1.7 (-11.8 to 10.7)

^a As defined by the criteria applied by the Centers for Disease Control and Prevention.

^b This is an investigation of covariates, which may or may not be associated with the development of a SSI.

Therefore, exploratory analysis of risk factors for the occurrence of SSI was performed. However, this is a univariable analysis at risk for multiple testing. The results should be interpreted with care. One should realize that this is data driven and not hypothesis driven and therefore these data have not been included in the manuscript.

^c The duration of the surgery was from the time of incision to the time of wound closure. Data are missing for 7 patients in the cefazolin group and 44 patients in the saline group.

^d Any use of cigarettes/alcohol.

^e More than one option possible.

^f A Kirschner wire or a K-wire is a thin sharp, stainless steel or titanium pin that is used to hold bone fragments together (pin fixation).

n; number, CI; confidence interval, ORIF; open reduction internal fixation, SD; standard deviation, SSI; surgical site infection