



Supplementary Material

10.1302/2046-3758.102.BJR-2020-0104.R3

Table i. Details for all cases.

Case	Age, yrs/Sex *	Joint	Antibio tic (days)*	Sinus tract	CRP (mg/ L)	ESR (mm/ h)	N- JF	SF	T-MH	T-MM	T-DTT	T-D	T-S	N-JF- WBC (cells/ μ l)	N-JF- PMN (%)	Histopathol ogy (P/N) *	Diagnosis (clinical decision)	Diagnosis (IDSA)	Diagnosis (MSIS)
1	64/M	Hip	N	Yes	46	74	-	-	<i>Staphylococ cus epidermidis</i> (4/6)	-	<i>Staphyloc occus epidermid</i> is (5/6)	-	-	4,160	63.0	P	PJI	PJI	PJI

2	47/M	Knee	N	No	67	96	-	Ent ero coc cus fae cal is	Enterococ cus faecalis (5/6)	-	Enterococ cus faecalis (4/6)	-	Enter ococ cus faeca lis (5/6)	3,470	60.3	N	PJI	PJI	PJI
3	82/M	Knee	N	No	67	81	-	Ps eu do mo nas aer ugi nos a	Pseudomona s aeruginosa (3/6)	Pseudo monas aerugin osa (2/6)	Pseudomo nas aeruginos a (4/6)	Pseu domo nas aerug inosa (5/6)	Pseu domo nas aerug inosa (6/6)	6,700	70.8	P	PJI	PJI	PJI
4	81/F	Hip	N	No	72	15	-	Kle bsi ell a pn eu mo nia e	Klebsiella pneumoniae (4/6)	Klebsiel la pneumo niae (3/6)	Klebsiella pneumoni ae (4/6)	Klebs iella pneu moni a (6/6)	Klebs iella pneu moni ae (5/6)	23,541	76.8	P	PJI	PJI	PJI

5	49/M	Knee	N	Yes	19	89	-	<i>Mycobacterium abscessus</i> (5/6)	<i>Mycobacterium abscessus</i> (4/6)	-	<i>Mycobacterium abscessus</i> (5/6)	35,641	78.9	N	PJI	PJI	PJI
6	70/F	Knee	N	No	13	83	-	<i>Aggregatibacter aphrophilus</i> (5/6)	<i>Aggregatibacter aphrophilus</i> (4/6)	-	<i>Aggregatibacter aphrophilus</i> (4/6)	34,889	87.3	P	PJI	PJI	PJI
7	64/F	Knee	Y (3)	Yes	39	120	-	<i>Staphylococcus aureus</i> (5/6)	<i>Staphylococcus aureus</i> (4/6)	-	-	25,679	91.5	P	PJI	PJI	PJI
8	68/F	Hip	Y (5)	No	3	28	-	<i>Klebsiella pneumoniae</i> (6/6)	<i>Klebsiella pneumoniae</i> (5/6)	-	-	43,148	70.9	N	PJI	PJI	PJI

9	75/M	Knee	Y (3)	Yes	95	130	-	-	<i>Escherichia coli</i> (5/6)	-	<i>Escherichia coli</i> (5/6)	-	-	27,391	62.7	N	PJI	PJI	PJI
10	70/F	Knee	Y (4)	Yes	96	65	-	-	<i>Finnegoldia magna</i> (3/6)	-	<i>Finnegoldia magna</i> (4/6)	-	-	1,230	91.5	P	PJI	PJI	PJI
11	54/M	Hip	Y (35)	Yes	20	88	-	-	-	-	-	-	-	17,988	87.9	N	PJI	PJI	PJI
12	78/M	Knee	Y (23)	No	2	25	-	-	-	-	-	-	-	2,663	69.6	P	PJI	PJI	AF
13	53/F	Hip	Y (19)	Yes	49	53	-	-	-	-	-	-	-	2,675	53.7	P	PJI	PJI	PJI
14	76/M	Hip	Y (58)	No	4	20	<i>Klebsiella pneumoniae</i>	<i>Klebsiella pneumoniae</i>	-	-	<i>Klebsiella pneumoniae</i> (4/6)	-	<i>Klebsiella pneumoniae</i> (4/6)	3,300	65.0	P	PJI	PJI	PJI
15	49/M	Hip	N	No	2	13	-	-	<i>Staphylococcus epidermidis</i> (1/6)	-	-	-	-	301	5	N	AF	AF	AF

16	58F	Hip	N	No	8	12	Staphylococcus epidermidis	-	-	-	-	-	1,200	32.8	P	AF	AF	AF
17	36/M	Knee	N	No	11	17	Propionibacterium acnes	-	-	-		Propionibacterium acnes (1/6)	1,391	37	N	AF	PJI	AF

18	50/M	Hip	N	No	5	14	-	-	-	<i>Staphylococcus hominis</i> (1/6)	-		<i>Staphylococcus hominis</i> (1/6)	2,754	69.1	N	AF	AF	AF
19	86/F	Knee	N	No	5	72	-	-	-	<i>Propionibacterium acnes</i> (1/6)	-		-	874	66.7	N	AF	AF	AF
20	80/M	Hip	N	No	10	71		-	-	<i>Staphylococcus hominis</i> (1/6)	-		-	302	23.5	P	AF	AF	AF
21	71/F	Hip	Y (42)	Yes	38	110	<i>Enterococcus gallinarum</i> (5/6)	<i>Enterococcus gallinarum</i> (4/6)	<i>Enterococcus gallinarum</i> (4/6)	<i>Enterococcus gallinarum</i> (3/6)	<i>Enterococcus gallinarum</i> (3/6)	<i>Enterococcus gallinarum</i> (3/6)	<i>Enterococcus gallinarum</i> (2/6)	35,612	87.3	N	PJI	PJI	PJI

22	53/M	Knee	N	No	47	123	Staphylococcus epidermidis (5/6)	Staphylococcus epidermidis (5/6)	Staphylococcus epidermidis (3/6)	Staphylococcus epidermidis (4/6)	1,745	89.3	N	PJI	PJI	PJI
23	55/F	Hip	N	Yes	54	78	Staphylococcus epidermidis (4/6)	Staphylococcus epidermidis (3/6)	Staphylococcus epidermidis (4/6)	Staphylococcus epidermidis (5/6)	869	89.5	N	PJI	PJI	PJI

24	75/M	Hip	Y (65)	No	48	65	Staphylococcus epidermidis (5/6)	Staphylococcus epidermidis (4/6)	Staphylococcus epidermidis (3/6)	Staphylococcus epidermidis (4/6)	Staphylococcus epidermidis (5/6)	3,347	77.3	N	PJI	PJI	PJI
25	51/M	Hip	N	Yes	55	76	Staphylococcus lugdunensis (4/6)	-	Staphylococcus lugdunensis (4/6)	Staphylococcus lugdunensis (2/6)	Staphylococcus lugdunensis (3/6)	4,578	84.9	P	PJI	PJI	PJI

26	64/F	Hip	N	Yes	67	66	Streptococcus agalactiae (5/6)	-	Streptococcus agalactiae (3/6)	-	-	Streptococcus agalactiae (4/6)	6,578	91.5	N	PJI	PJI	PJI
27	78/M	Knee	N	No	62	99	Helcococcus kunzii (6/6)	Helcococcus kunzii (3/6)	Helcococcus kunzii (4/6)	Helcococcus kunzii (3/6)	Helcococcus kunzii (4/6)	Helcococcus kunzii (4/6)	3,423	88.9	N	PJI	PJI	PJI
28	58/F	Hip	N	Yes	17	34	Staphylococcus aureus (5/6)	-	Staphylococcus aureus (3/6)	-	-	Staphylococcus aureus (5/6)	3,421	66.8	P	PJI	PJI	PJI

29	63/F	Knee	N	No	20	46	Staphylococcus aureus (4/6)	Staphylococcus aureus (3/6)	-	Staphylococcus aureus (5/6)	Staphylococcus aureus (3/6)	1,532	88.9	P	PJI	PJI	PJI
30	59/F	Hip	N	Yes	88	66	Staphylococcus aureus (5/6)	Staphylococcus aureus (4/6)	-	Staphylococcus aureus (3/6)	Staphylococcus aureus (4/6)	7,538	87.9	N	PJI	PJI	PJI
31	68/F	Knee	N	Yes	56	87	Mycobacterium fortuitum (5/6)	Mycobacterium fortuitum (3/6)	Mycobacterium fortuitum (4/6)	Mycobacterium fortuitum (3/6)	Mycobacterium fortuitum (5/6)	3,005	92.5	P	PJI	PJI	PJI

32	49/M	Knee	Y (4)	Yes	49	46	My co ba cte riu m abs ces sus	My co ba cte riu m abs ces sus	Mycobacteri um abscessus (4/6)	-	Mycobact erium abscessus (4/6)	-	Myco bacte rium absce ssus (2/6)	1,237	77. 3	P	PJI	PJI	PJI
33	74/F	Hip	Y (3)	Yes	50	88	Sta ph ylo coc cus aur eus	Sta ph ylo coc cus aur eus	Staphylococ cus aureus (5/6)	Staphyl ococcus aureus (3/6)	Staphyloc occus aureus (5/6)	Staph yloco ccus aureu s (4/6)	Staph yloco ccus aureu s (4/6)	26,543	91.3	P	PJI	PJI	PJI
34	56/M	Hip	Y (7)	Yes	78	103	Sta ph ylo coc cus aur eus	Sta ph ylo coc cus aur eus	Staphylococ cus aureus (5/6)	Staphyl ococcus aureus (3/6)	Staphyloc occus aureus (4/6)	Staph yloco ccus aureu s (3/6)	Staph yloco ccus aureu s (4/6)	35,621	86.3	P	PJI	PJI	PJI
35	72/M	Hip	N	No	5	34	-	-	-	-	-	-	-	2,565	54. 3	N	AF	AF	AF
36	63/F	Hip	N	No	6	46	-	-	-	-	-	-	-	1,789	48.4	N	AF	AF	AF
37	68/F	Knee	N	No	5	21	-	-	-	-	-	-	-	1,321	55.3	P	AF	AF	AF

38	72/F	Hip	N	No	5	12	-	-	-	-	-	-	-	765	62.4	N	AF	AF	AF
39	53/M	Hip	N	No	5	45	-	-	-	-	-	-	-	467	53.9	N	AF	AF	AF
40	45/M	Knee	N	No	6	67	-	-	-	-	-	-	-	235	23.5	N	AF	AF	AF
41	62/F	Hip	N	No	5	42	-	-	-	-	-	-	-	458	67.8	P	AF	AF	AF
42	73/F	Hip	N	No	5	35	-	-	-	-	-	-	-	124	7.8	N	AF	AF	AF
43	62/F	Hip	N	No	6	42	-	-	-	-	-	-	-	657	44.6	N	AF	AF	AF
44	63/F	Hip	N	No	6	35	-	-	-	-	-	-	-	343	56.3	P	AF	AF	AF
45	51/F	Hip	N	No	6	54	-	-	-	-	-	-	-	766	44.8	N	AF	AF	AF
46	69/F	Knee	N	No	5	43	-	-	-	-	-	-	-	236	53.7	P	AF	AF	AF

*M: male; F: female. Administration of antibiotic preoperatively (Yes, Y/No, N); P: positive; N: negative.

Table ii. Periprosthetic joint infection diagnostic criteria.

Musculoskeletal Infection Society criteria*	Infectious Diseases Society of America criteria
<p>Patient meets the criteria for PJI if one or more of the following is present:</p> <ol style="list-style-type: none"> 1. Indistinguishable microorganism isolated from two or more fluid or tissue samples from the affected prosthetic joint. 2. Sinus tract in communication with the underlying prosthetic joint. 3. Four of the following present: <ol style="list-style-type: none"> i. CRP > 10 mg/L) and/or ESR > 30 mm/hr† ii. Elevated synovial leucocyte count > 1,000 cells/μL† iii. Elevated synovial PMN percentage > 65%† iv. Presence of purulence noted in intraoperative report v. Evidence of acute inflammation on histological examination as reported by the pathologist‡ vi. Isolation of a microorganism on a single fluid or tissue sample from the affected joint 	<p>Patient meets the criteria for PJI if one or more of the following is present:</p> <ol style="list-style-type: none"> 1. Indistinguishable microorganism isolated from two or more fluid or tissue samples from the affected prosthetic joint. 2. Sinus tract in communication with the underlying prosthetic joint. 3. Presence of purulence noted in intraoperative report. 4. Evidence of acute inflammation on histological examination as reported by the pathologist‡
<p>*The Musculoskeletal Infection Society (MSIS) criteria for periprosthetic joint infection (PJI) is based on the original definition. The MSIS criteria were subsequently amended after completion of the study. In the new MSIS criteria, purulence was omitted and 3/5 minor criteria were required for the diagnosis of PJI.</p> <p>†The values for elevated CRP, ESR, synovial leucocyte count, and polymorphonuclear leucocyte percentage (PMN%) were not defined in the original Musculoskeletal Infection Society (MSIS) criteria; these values are derived from the literature available at the time of study design and implementation and were applied consistently to the cohort.</p> <p>‡The presence of positive histopathology is modified from the MSIS criteria, which stipulate the presence of five or more polymorphonuclear leucocytes (PMNs) per high power field. This was altered to align with the histological reporting by pathologists at the Mayo Clinic.</p>	
<p>MSIS, Musculoskeletal Infection Society; PJI, periprosthetic joint infection; PMN, polymorphonuclear leucocyte.</p>	