**Supplementary table 1: Bacteriological findings, antibiotic treatment, CSF cell count, % polymorphonuclear cells, CSF glucose- and lactate concentration in patients with culture-proven external ventricular catheter-associated infection**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pt.** | **Day of****positive****culture** | **Culture results** | **Gram stain** | **CSF cell count (x106/L)** | **% PMN**  | **CSF glucose (mmol/L)** | **CSF/blood glucose ratio** | **CSF lactate concentration (mmol/L)** | **Antibiotic treatment** |
| 1 | Day 4 | *Moraxella catarrhalis* | Negative | 16 | 94% | 7.5 | 0.49 | 3.7 | No |
| 2 | Day 10 | *Enterobacter cloacae and**S. epidermidis* | Gram positive cocci and Gram negative rods | 1174 | 100% | 4.6 | - | - | Start day 10 (Flucloxacillin, Vanco/Cefta) |
| 3 | Day 11 | *Klebsiella pneumoniae* | Negative | 60 | 68% | 4.2 | 0.55 | 3.2 | No |
|  | Day 12 | *Klebsiella pneumoniae* | Negative | 317 | 97% | 0 | NA | 14 | Start day 12 (vanco/cefta) |
|  | Day 13 | *Klebsiella pneumoniae* | Negative | 13.333 | 94% | 0.2 | 0.02 | - | Yes (vanco/cefta) |
|  | Day 20 | Culture negativeCatheter tip: Coagulase negative Staphylococci | Negative | 7840 | 89% | <0.1 | 0.01 | 8.9 | Meropenem and vancomycin |
|  | Day 21 | *S. epidermidis* | Negative | 179 | 51% | 0.4 | 0.06 | 8.0 | Meropenem and vancomycin |
| 4 | Day 8 | *Moraxella species* in both drains | Negative | 736/1020 | 75/58% | 3.6/3.6 | 0.48 | 3.4/3.7 | Yes, flucloxacillin/cefta |
|  | Day 9 | *Moraxella species, S. epidermidis* in both drains | Negative | 979/2510 | 67/65% | 2.8/2.6 | 0.41/0.38 | 5.7/5.0 | flucloxacillin/cefta |
|  | Day 10 | *Moraxella species, S. epidermidis* | Gram negative rods | 10.000 | 94% | 2.0 | 0.27 | 5.0 | Yes (flucloxacillin/cefta) |
|  | Day 11 | *S. epidermidis* | Negative | 7700 | 98% | 2.4 | 0.25 | - | Yes, Meropenem |
|  | Day 12 | Drain tip*: E. faecalis, S. epidermidis, Pantoea septica* | - | - | - | - | - | - | Yes, Meropenem |
|  | Day 14 | *E. faecalis* | Negative | 13.800 | 92% | 1.6 | - | - | Yes, Meropenem |
| 5 | Day 12 | *S. epidermidis* | Negative | 129 | 74% | 5.7 | 0.71 | 3.9 | Ceftazidim (since day 2) |
|  | Day 14 | *S. epidermidis* in both drains | Gram positive cocci in one drain, other negative | - | - | 5.8 | 0.46 | - | Yes, vanco/cefta |
|  | Day 16 | *S. epidermidis* in both drains | Gram positive cocci in both drains | 0 | NA | 5.9 | 0.41 | - | Yes, vanco/cefta |
|  | Day 18 | *S. epidermidis* | Negative | 627 | 90% | 3.9 | 0.56 | - | Yes, vanco/cefta |
|  | Day 19 | *S. epidermidis* | Negative | 421 | 95% | 5.3 | 0.32 | 7.6 | Yes, vanco/cefta |
|  | Day 20 | *S. epidermidis* | Negative | 355 | 96% | 5.6 | 0.86 | 6.4 | Yes, vanco/cefta |
|  | Day 21 | *S. epidermidis* | Negative | 67 | 82% | 6.2 | - | 5.4 | Yes, vanco/cefta |
|  | Day 24 | *S. epidermidis* | Negative | 107 | 72% | 5.2 | 0.58 | 5.9 | Yes, vanco/cefta |
| 6 | Day 18 | *S. epidermidis* | Negative | 4320 | 94% | 2.1 | - | - | Start day 18 vanco/cefta |
| 7 | Day 7 | *Serratia marcescens* | Gram positive rods | 2699 | 97% | 1.8 | 0.26 | 7.3 | Start day 7 vanco/cefta |
|  | Day 8 | *Serratia marcescens* | Gram negative rods | 24.000 | 97% | 0.3 | 0.03 | 14.6 | Start day 8 meropenem |
|  | Day 9 | *Serratia marcescens* | Gram negative rods | 1703 | 94% | 0.1 | 0.01 | 13.3 | Yes, meropenem |
|  | Day 10 | *Serratia marcescens* | Gram negative rods | - | - | 1.5 | - | 8.1 | Yes, meropenem |
| 8 | Day 9 | *E. faecalis* | Negative  | 42 | 74% | 4.2 | - | 2.3 | No |
|  | Day 10 | *E. faecalis* | Gram positive diplococci | 155 | 70% | 4.9 | 0.58 | - | Nitrofurantoin |
|  | Day 12 | *E. faecalis* | Gram positive diplococci | 1374 | 81% | 4.7 | - | 4.9 | Since day 11 amoxicillin/ceftriaxon |
|  | Day 13 | *E. faecalis* | Negative | 626 | 75% | 3.8 | - | 4.8 | Yes, amoxicillin/ceftriaxon |
|  | Day 14 | *E. faecalis* | Gram positive diplococci | 167 | 72% | 3.8 | - | 4.1 | Yes, amoxicillin/ceftriaxon |
|  | Day 15 | *E. faecalis* | Gram positive diplococci | 55 | 82% | 4.1 | - | 4.1 | Yes, amoxicillin/ceftriaxon |
| 9 | Day 9 | *S. haemolyticus* | Negative | 3 | 33% | 5.2 | 0.47 | 2.4 | Cefuroxim/ciprofloxacin |
|  | Day 11 | *S. haemolyticus* | Negative | 804 | 94% | 5.3 | 0.63 | 3.9 | Vanco/cefta |
| 10 | Day 12 | *Pseudomonas species, E. faecium* | Gram positive cocciGram negative rod | 2685 | 79% | 3.6 | - | 5.5 | Start day 11 vanco/cefta |
|  | Day 13 | *Pseudomonas species, E. faecium* | Gram positive cocciGram negative rod | 41 | 80% | 3.2 | - | 3.9 | Yes, vanco/cefta |
|  | Day 14 | *Pseudomonas species, E. faecium* | Gram negative rod | 156 | 82% | 3.4 | - | 3.9 | Yes, vanco IV + IVT /cefta.  |
|  | Day 15 | *Pseudomonas fulva* | Gram negative rod | 1520 | 93% | 3.9 | - | - | Yes, vanco IV + IVT /cefta |
|  | Day 16 | *Pseudomonas fulva* | Negative | - | - | - | - | - | Yes, vanco IV + IVT /cefta |
|  | Day 17 | *Pseudomonas fulva* | Negative | 602 | 85% | 2.7 | - | 2.7 | Yes, vanco IV + IVT /cefta |
| 11 | Day 10 | *S. epidermidis* | Negative | 4 | 50% | 4.5 | 0.87 | 1.4 | No |
|  | Day 11 | *S. epidermidis* | Gram positive cocci | 7 | 86% | 5.3 | 0.80 | 1.9 | No |
|  | Day 12 | *S. epidermidis* | Gram positive cocci | 28 | 89% | 3.6 | 0.61 | 2.0 | No |
| 12 | Day 3 | *S. capitis* | Negative | 115 | 54% | 4.1 | 0.66 | - | Day 3 start Vanco/cefta |
|  | Day 7 | *S. capitis* | Negative | 733 | 66% | 3.2 | 0.46 | 2.9 | Vancomycin |
| 13 | Day 8 | *E. faecalis* | Negative | 49 | 71% | 5.2 | - | - | No |
|  | Day 10 | *E. faecalis* | Gram positive cocci | 1092 | 87% | 3.4 | - | - | Day 10 start amoxicillin |
|  | Day 11 | Drain tip: *E. faecalis* | - | - | - | - | - | - | Yes, amoxicillin |
| 14 | Day 13 | *S. hominis* | Negative | 490 | 87% | 4.3 | - | - | Day 13 start vanco/cefta |
| 15 | Day 9 | *S. aureus* | Negative | 236 | 16% | 3.2 | 0.5 | 2.2 | No |
|  | Day 10 | CSF culture: *S. aureus.* Drain tip: *S. aureus and S. epidermidis* | Negative | 3363 | 67% | 2.8 | - | 4.7 | Day 10 start vanco/cefta |
| **Vanco/cefta= Vancomycin + Ceftazidim****IV= intravenous administration****IVT= intraventricular administration** |