**Supplementary Table 2.** Description of treatment arms from trials included in this systematic review and network meta-analysis. Treatment combinations were made in consultation with experts and based on biological and clinical relevancy of antimicrobial products to veterinarians and dairy producers, and on the World Organisation for Animal Health List of Antimicrobials of Veterinary Importance (OIE, 2007).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Route | Treatment description | Dose | T Treatment Map | Network Iteration 11 | Network Iteration 22 |
| Intramammary | Cloxacillin | 500mg | Clox | Cx | Cx |
| Cloxacillin | 600mg | Clox | Cx | Cx |
| Cloxacillin | 500mg (given at dry off and a 2nd infusion was made 3 weeks later) | Clox - extended | Cxext | Cxext |
| Cloxacillin | 500mg (given at 0, 7, and 14 days into the dry period) | Clox - extended | Cxext | Cxext |
| Cloxacillin | 200mg | Clox - low | CxL | CxL |
| Cloxacillin | 1000mg | Clox – high | CxH | CxH |
| Cloxacillin | 1280mg | Clox – high  | CxH | CxH |
| Hydrocortisone acetate, hydrocortisone sodium succinate, neomycin sulphate, chlorobutanol anhydrous | 20mg, 12.5mg, 500mg, 500mg | Cort/neo/chlor | CNC | CNC |
| Penethamate hydroiodide BAN, dihydrostreptomycin sulphate | 300mg, 300mg | Pen/strep | PS | Pam |
| Nafcillin, procaine penicillin G, dihydrostreptomycin | NR | Pen/strep | PS | Pam |
| Penicillin streptomycin | NR | Pen/strep | PS | Pam |
| Procaine benzylpenicillin and dihydrostreptomycin | 4.9% m/m, 6.5% m/m | Pen/strep | PS | Pam |
| Benzathine penicillin G, dihydrostreptomycin | 1 200 000IU, 1.0g | Pen/strep | PS | Pam |
| Procaine penicillin G and dihydrostreptomycin | 500 000IU, 500mg | Pen/strep | PS | Pam |
| Procaine penicillin G and dihydrostreptomycin | 100 000IU, 100mg | Pen/strep | PS | Pam |
| Procaine penicillin G and dihydrostreptomycin | 1 000 000IU, 0.5g | Pen/strep | PS | Pam |
| Procaine penicillin G and dihydrostreptomycin | 1 000 000 IU, 1g | Pen/strep | PS | Pam |
| Procaine penicillin G and dihydrostreptomycin | 1 000 000IU, 0.5g | Pen/strep | PS | Pam |
| Benzathine nafcillin | 500mg | Nafcillin | Nf | - |
| Benzathine nafcillin | 250mg | Nafcillin | Nf | - |
| Benzathine nafcillin | 100mg | Nafcillin | Nf | - |
| Benzathine benzylpenicillin, chloramphenicol, sulfatolamide | 2 500 000IU, 2.5g, 2.5g | Penicillin/chloramphenicol/sulfa | PCS | PCS |
| Benthamine benzylpenicillin, penethamate hydrioide, framycetin sulphate | 300 000IU, 100 000IU, 100mg | Penicillin/framycetin | PF | Pam |
| Penthamate framycetin | NR | Penicillin/framycetin | PF | Pam |
| Penethamate hydrioidide, benethamine penicillin, framycetin sulphate | 100mg, 280mg, 100mg | Penicillin/framycetin | PF | Pam |
| Penethamate hydriodide BAN, benethaminpenicillin, framycetin sulphate | 100mg, 300mg, 100mg | Penicillin/framycetin | PF | Pam |
| Leocillin, benethaminpenicillin, framycetin sulphate | 100 000IU300 000IU100mg | Penicillin/framycetin | PF | Pam |
| Procaine penicillin and neomycin sulfate | 50mg, 300mg(and 500 000IU, 300mg) | Pen/neo | PN | Pam |
| Neomycin sulphate, penicillin V | 500mg325 000IU | Pen/neo | PN | Pam |
| Procaine benzylpenicillin, nafcillin, hydrostreptomycin | 300 000IU100mg100mg | Penicillin/nafcillin/strep | PNS | Pam |
| Ceftiofur | 125mg | Ceftiofur | B | B |
| Ceftiofur | 250mg | Ceftiofur | B | B |
| Ceftiofur | 500mg | Ceftiofur | B | B |
| Cephalonium | 250mg | Cefalonium | CP | CP |
| Cephapirin benzathine | 300mg | Cefapyrin | C | C |
| Cephapirin benzathine | 500mg | Cefapyrin | C | C |
| Cephapirin sodium | 200mg | Cefapyrin | C | C |
| Cephradine (asemisynthetic cephalosporin) | 250mg (twice at one week intervals) | Cefradine | Cdext | Cdext |
| Cephalexin | Dose unknown, product contained cephalexin microspheresDose unknown, only the antibiotic product - no microspheres | Cefalexin | Cf | - |
| Cephalexin, neomycin sulphate | 250mg, 250mg | Cefalexin/neomycin | CfN | CfN |
| Cefquinome | 150mg | Cefquinome | Cq | Cq |
| Cephazoline | 250mg | Cefazolin | Cz | Cz |
| Cloxacillin & Ampicillin | 500mg, 250mg | Cloxacillin/ampicillin | CA | CA |
| Dicloxacillin sodium | 7.5g | Diclox | DiCx | DiCx |
| Enrofloxacin | NR | Enrofloxacin IMM | E-IMM | E-IMM |
| Erythromycin | 600mg | Erythromycin | Erm | Erm |
| Gentamicin | NR | Gentamicin | G | G |
| Penicillin | 100 000IU | Pen | P | P |
| Penicillin | 200 000IU | Pen | P | P |
| Penicillin | 400 000IU | Pen | P | P |
| Procaine penicillin g | 300mg | Penicillin | P | P |
| Procaine penicillin g | 1 000 000IU | Penicillin | P | P |
| Benzathine oxacillin | Benzathine oxacillin equal to 800 mg oxacillin, oxacillin sodium monohydrate equal to 200 mg oxacillin | Oxacillin | Ox | Ox |
| Neomycin sulphate and oxytetracycline | 200mg, 300mg | Oxytet/neo | OxN | OxN |
| Novobiocin | 50mg | Novobiocin | N | N |
| Novobiocin | 200mg | Novobiocin | N | N |
| Novobiocin | 400mg | Novobiocin | N | N |
| Novobiocin | 600mg | Novobiocin | N | N |
| Penicillin, novobiocin | 100 000IU, 400mg | Pen/novo | PNv | PNv |
| Procaine penicillin g and novobiocin | 200 000IU, 400mg | Pen/novo | PNv | PNv |
| Penicillin, novobiocin | 400 000IU, 400mg | Pen/novo | PNv | PNv |
| Intramammary, continued | Penicillin and sodium novobiocin | 300 000IU, 250mg (and 300mg, 250mg) | Pen/novo | PNv | PNv |
| Procaine penicillin g and novobiocin | 500 000IU, 600mg | Pen/novo | PNv | PNv |
| Procaine penicillin and neomycin sulfate | 50mg, 300mg(after complete milking starting from day 30-20 prior to calving: 4 consecutive infusions and all infused syringes were removed 24 hours after infusion) | Pen/neo/extended | PNext | PNext |
| Procaine penicillin G and dihydrostreptomycin | 200 000IU, 100mg(2 times: during the first week and again during the second week of the dry period) | Pen/strep/extended | PSext | PSext |
| Penethamate hydriodide BAN, dihydrosteptomycin sulfas | 300mg, 300mg(4 injections, administered every 2nd day before drying off) | Pen/strep/extended | PSext | PSext |
| Spiramycin | 500mg | Spiramycin | S | S |
| Spiramycin& neomycin | 400mg, 100mg | Spiramycin/neo | SN | SN |
| Tilmicosin | 1500mg | Tilmicosin | T | T |
| Intramammary &Parenteral | Benzathine oxacillin& Enrofloxacin | benzathine oxacillin equal to 800 mg oxacillin, oxacillin sodium monohydrate equal to 200 mg oxacillin & 2.5mg/kg IM | Oxacillin/Enrofloxacin | OxE | OxE |
| Parenteral | Enrofloxacin & Levamisole | 5 mg/kg body weight for 3 days IM + 2.5mg/kg body weight as a single dose subcutaneously(3 days IM (enrofloxacin) but single dose of levamisole) | Enro/levamisole/extended | ELext | ELext |
| Levamisole | 2.5mg/kg body weight (single dose subcutaneously) | Levamisole | L | L |
| Enrofloxacin | 5 mg/kg body weight(for 3 days IM) | EnrofloxacinINJ | E-ext | E-ext |
| Enrofloxacin (Baytril) | 2.5mg/kg IM | EnrofloxacinINJ | E-INJ | E-INJ |
| Lincomycin & spiramycin (Lispiricin) | 5mg/kg, 10mg/kg(at end of lactation and at 14th days pre calving) | Lincomycin/spir | LSext | LSext |
| Intramammary & Non-antimicrobial treatment | Cephapirin benzathine& 1mg recombinant bovine interleukin-2 (rbIL-2) in each quarter immediately preceding intramammary infusion of DCT | 300mg& 1mg | CephInt | CIn | CIn |
| Cephapirin benzathine& 2mg interleukin-2 per gland (10mL, bioactivity 44 x 10^6 IU/mg in a bovine T cell assay) | 300mg& 2mg | CephInt2mg | CIn2 | CIn2 |
| Cephapirin benzathine& 10 mL of endotoxin-free PBS in each quarter immediately preceding antibiotic DCT or 10 mL phosphate-buffered saline (after antibiotic treatment) | 300mg& 10mL | Cefapyrin PBS is a placebo) | C | C |
| Ceftiofur hydrochloride+ Orbeseal | 500mg | Ceftiofur/TS | BTS | B |
| Cephalonium + TeatSeal | 250mg | Cephalonium/TS | CPTS | CP |
| Cephapirin benzathine + Orbeseal | 300mg | Cefapyrin/TS | CTS | C |
| Ciprofloxacin hydrochloride + Sellat (bismuth subnitrate 4g) Ourofino Saude Animal, Brazil | 400mg | Ciprofloxacin/TS | CpTS | Cp |
| Cloxacillin benzathine + Orbeseal | 500mg | Clox/ts | CxTS | Cx |
| Cloxacillin + Orbeseal | 600mg | Clox/ts | CxTS | Cx |
| Cloxacillin + Osmondes Teat Seal | 600mg | Clox/ts | CxTS | Cx |
| Procaine penicillin G and dihydrostreptomycin + Orbeseal | 1 000 000IU, 1g | Pen/strep/ts | PSTS | Pam |
| Parenteral & Non-antimicrobial treatment | Enrofloxacin + vitamin E and selenium | 5 mg/kg body weight for 3 days IM + Vitamin E and Selenium @ 55 IU and 1.5mg/25kg body weight as a single dose IM(3 days IM for enrofloxacin, but single dose for vitamin E and Se) | Enrofloxacin/VitE | EVeS | EVeS |
| Non-antimicrobial treatment | Cinnatube: contains Calendula (antiinflammatory), Cinnamomum spp (antibacterial), Eucalyptus gobulus (antibacterial), Melaleuca alterniflora (antibacterial), Beeswax). | NR | Cinnatube | Cinn | NonA |
| Iodinated diaminodiphenylsulphone (A suspension of dapsone, reinforced by iodine, with the addition of iodoform and a surfactant (Texofor, I.S.U.) in a soft paraffin base (Super Cryozol, IDDS 17%, equivalent to 1·0 g dapsone, Crown Chemical Company, Lamberhurst, Kent)) | 1.0g ? | IDDS | IDDS | NonA |
| Phyto-Mast: contains angelica dahuricae (antiinflammatory), Angelica sinensis (immunomodulatory), gaultheria procumbens (analgesic), and glycyrrhiza uralensis (antiinflammatory), and thymus vulgaris (antibacterial) | NR | Phyt | Py | NonA |
| Phyto-Mast + Cinnatube | NR | PhtyCinna | PyCinn | NonA |
| TeatSeal | 4g | TS | TS | TS |
| 0.5g alpha-tocopherol acetate + 0.25mg sodium selenite orally (E-Sel Powder, Square Pharmaceuticals Limited) | (oral) 0.5g, 0.25mg(orally daily for the last 30 days before calving) | TocoSe x30 | TSe30 | NonA |
| IM injections of 1g alpha-tocopherol acetate + 5mg sodium selenite per cow (Inj. E-Veet Plus Solution, The ACM Laboratories Limited) | 1g, 5mg(on day 30 (Dry-off) and day 20 before calving: 2 per day) | Toco1gSe5mg x4 | TSe4 | NonA |
| Vitamin E and Selenium @ 55IU and 1.5mg/25kg body weight as a single dose IM | 55IU, 1.5mg/kg | VESe | VeS | NonA |
| No treatment | Negative control |  | NAC | NAC | NAC |

1Network iteration one refers to the first stage of product combination, whereby products were combined based on similar dosages, but products of varying active compounds remained separate

2Network iteration two refers to the second stage of product combination, whereby penicillin-aminoglycoside products were combined based on the World Organisation for Animal Health (2007) list of antimicrobials of human importance, and active antimicrobial products were combined with their antimicrobial and teat sealant combination products (i.e., cloxacillin was combined with cloxacillin-teat sealant of the same dose)