INTRAPARTUM FEVER

Dr Claudia Rueda, Dr Pilar Carrillo, Dr Silvia Ferrero, Dr Marta López, Dr Teresa Cobo, Dr Montse Palacio

1. DEFINITION

Intrapartum fever is defined as a measured temperature **≥ 38ºC** (persistent despite antipyretic treatment or 2 peaks 4-6 hours apart) during delivery or less than 24 hours postpartum. In the first 24 hours postpartum, the temperature must be higher than 38.5ºC or associated with other clinical signs of infection, in order to be considered clinically relevant.

The **causes** of intrapartum fever can be non-infectious (epidural analgesia as the main cause, followed by the use of prostaglandins), due to a bacterial infection (e.g. intra-amniotic infection, urinary infection) or viral infection (influenza, enterovirus and varicella as the most prevalent). In preterm pregnancies, the bacterial infectious aetiology is the most prevalent.

Intrapartum fever is related to adverse neonatal outcomes due to foetal hyperthermia, which can lead to tissue hypoxia and metabolic acidosis. Hyperthermia increases the risk of neurological depression (Apgar <7, hypotonia, seizures, and even neonatal encephalopathy), the need for assisted ventilation or cardiopulmonary resuscitation, and the risk of sepsis.

2. DIAGNOSIS

2.1. HISTORY AND PHYSICAL EXAMINATION

- Identify maternal **risk factors** as well as risk factors related to childbirth: nulliparity, preterm pre-labour rupture of membranes, GBS colonisation, prolonged labour, multiple vaginal examinations, or pre-existing infectious conditions.
- Measure **vital signs**: blood pressure, pulse, temperature.
- Rule out, by anamnesis and physical examination, any **other source of infection** that justifies the febrile condition (lymph nodes, ear/nose/throat examination, pulmonary auscultation, abdominal examination, signs of thrombophlebitis, etc.), and act according to clinical suspicion (urine culture, chest X-ray, nasopharyngeal swab to rule out respiratory viruses such as influenza or SARS-CoV2, etc.)
- Evaluate foetal monitoring (non stress-test - **NST**) and the characteristics of amniotic fluid (purulent, malodorous, etc). Foetal tachycardia may be reactive to maternal fever or intrauterine infection.

2.2. COMPLEMENTARY TESTS

- <u>One isolated febrile determination <39ºC + asymptomatic patient (haemodynamically stable, good physical</u> appearance...):
  - **Complementary tests are NOT required** if the patient presents a good general condition.

- One febrile determination + symptomatic patient (or ≥ 39ºC) or 2 febrile determinations (febrile peaks 4-6h apart or persistent fever ≥ 38ºC despite antipyretics)
  - **Blood test**: complete blood count, CPR, and coagulation. In case of suspicion of sepsis (SBP <90 mmHg, HR>120 bpm, RR>24 rpm, basal oxygen saturation <95%, oliguria, agitation or maternal confusion), add lactate, liver and kidney function tests.
  - **Blood culture**: extracted preferably before the initiation of antibiotic therapy if it does not delay the start of treatment. If possible, two determinations (no need to wait between them), either from the catheter or from peripheral blood. In each determination, puncture a venous access on each arm (left/right).
  - **Urine culture**: it is appropriate to obtain this by spontaneous voiding, although in a patient with epidural anaesthesia it can be done by intermittent bladder catheterisation.
  - In the event of a specific focus of fever, appropriate imaging tests or cultures should be performed (chest X-ray for instance).
  - If fever onset is after delivery but <24 hours postpartum: Perform gynaecological ultrasound.

3. TREATMENT

Antipyretic treatment:

- Paracetamol 1 g intravenous (IV)
- 2nd line or in case of allergy to paracetamol:
  - Postpartum and non-lactating women: Dexketoprofen 50 mg IV.
  - Pregnant and lactating women: restrict the use of Metamizol, given the increased risk of acute lymphocytic leukaemia in neonates. Evaluate risk-benefit.

Antibiotic treatment: start empirical antibiotic regimen (Table 1):

If already receiving antibiotics for positive GBS, it is advisable to change to the regimen of choice (Table 1).

In the case of >24 h pre-labour rupture of membranes (at term or preterm) with antibiotic treatment and intrapartum fever, suspect chorioamnionitis. In this case, it is recommended to switch antibiotics according to the chorioamnionitis protocol.

Table 1. Empirical antibiotic therapy in intrapartum fever.

	< 37 weeks	**≥ 37 weeks or < 24 h postpartum**
NO ESBL* risk factors (annex 1)	Piperacillin-Tazobactam 4g/6h IV + Clarithromycin 500 mg/12h oral	Piperacillin-Tazobactam 4g/6h IV
WITH ESBL risk factors (annex 1) (Take a rectal swab to screen for ESBL upon admission)	Ampicillin 2g/6h IV + Ertapenem 1g/24h IV + Clarithromycin 500/12h oral	Ampicillin 2g/6h IV + Ertapenem 1g/24h IV
Penicillin allergy • Teicoplanin 400 mg/12h IV x 3 doses (loading dose) and later 400 mg/24h ev + Aztreonam 1g/8h IV + Metronidazole 500 mg/8h IV.		

- Alternative: Tigecycline 100 mg x 1 dose and later 50 mg/12h IV + Metronidazole 500 mg/8h IV

* ESBL: extended-spectrum beta-lactamases

3.1. MANAGEMENT OF LABOUR

- If a good evolution of the vaginal delivery is anticipated, it can go ahead under antibiotic coverage and continuous foetal monitoring. The results in the case of clinical chorioamnionitis improve when intrapartum antibiotic has been administered for at least 4 hours. After 12 hours of induction of labour, there is an increased risk of uterine atony and a low neonatal Apgar, but no increased incidence of other maternal or neonatal complications has been observed.
- Consider indication for caesarean section/instrumental delivery depending on obstetric indications.
- Perform placental cultures in both the maternal and foetal side and send placenta for anatomopathological study in case of preterm birth or suspicion of intra-amniotic infection.
- Inform neonatologist of the presence of intrapartum fever.

3.1. POSTPARTUM MANAGEMENT

After delivery (regardless of whether it was vaginal or caesarean section), **antibiotic therapy will be continued up to 48h even in the absence of fever**. De-escalate or suspend the empirical antibiotic regimen based on clinical evolution and microbiological results.

- **Satisfactory clinical or analytical evolution:**
  - If the clinical evolution is correct and the patient remains afebrile, it is not necessary to perform serial postpartum blood tests. In case of significant intrapartum laboratory abnormalities (leucocytosis > 20,000 or leukopenia, marked left shift, CPR >10 mg/dL (or > 100 mg/L), coagulation alteration), it is recommended to perform postpartum an analytical control even in the case of good clinical evolution, in order to confirm analytical improvement.
  - Check the results of cultures:
    - Placental cultures: a positive placenta culture does not imply prolongation of antibiotic treatment if there is a correct clinical-analytical evolution.
    - Positive blood culture: adjust treatment based on the clinical status and antibiogram. Maintain antibiotic treatment for at least 7 days. After 48 hours on intravenous treatment, if the patient is afebrile, it can be changed to oral antibiotic if the antibiogram allows it. It is recommended to discuss the case with the infectologists/microbiologists.
    - Positive urine culture: possible acute pyelonephritis (go to specific protocol).

- **Persistence of fever:**
  If clinical evolution is unfavourable, the type and duration of antibiotics should be individualised based on the results of the cultures and in collaboration with infectologists and microbiologists.

PUERPERAL FEVER

1. DEFINITION

Puerperal fever is defined as a measured temperature **≥ 38ºC** (persistent despite antipyretic treatment or 2 peaks 4-6 hours apart) from 24 hours after delivery to six weeks postpartum.

The main causes of puerperal fever are:

1. **Puerperal mastitis**: infection of the breast parenchyma, especially related to breastfeeding (go to specific protocol).

2. **Surgical site infection** (caesarean section, episiotomy, intra-abdominal collections): surgical site infection complicates approximately 5% of caesarean deliveries, generally 4 to 7 days after surgery. The microorganisms causing the infection can come from the skin (*Staphylococcus aureus*) or from vaginal flora that has contaminated the uterus or amniotic cavity (aerobic and anaerobic bacteria as in puerperal endometritis).

3. **Puerperal endometritis**: bacterial infection that appears between 1 and 10 days postpartum (more frequent between the 3rd and 4th day postpartum) as a consequence of postpartum infection of the endometrial tissue. In addition to fever, it may be associated with hypogastric pain, pain with uterine mobilisation, subinvoluted uterus, persistent metrorrhagia, or malodorous lochia. It is a potentially serious clinical picture that, without treatment, can evolve into diffuse pelvic peritonitis, and even puerperal sepsis. It is usually a polymicrobial infection caused by an ascending infection. The germs most frequently involved are:
   - Aerobic bacteria (*Escherichia coli* and other enterobacteria, streptococci, *Enterococcus faecalis, Gardnerella vaginalis, Mycoplasma hominis**, *Ureaplasma urealitycum**). (* Despite being two germs that are frequently isolated in cultures, their direct causal relationship with endometritis is not well defined).
   - Anaerobic bacteria (*Prevotella spp., Bacteroides fragilis, Peptostreptococcus spp.*)

   Early endometritis (<24 hours postpartum): most frequently monomicrobial, and the most frequent are: *Staphylococcus aureus*, group A (*S.pyogenes*) and B (*S.agalactiae*) beta-haemolytic streptococci, *Clostridium spp*.

   Late endometritis (15%, between the 1st - 6th week postpartum). Clinical signs are usually milder and most will require oral treatment. It may be related to a *Chlamydia trachomatis* infection.

4. **Acute pyelonephritis** (see specific protocol).

5. **Other systemic infections** not related to childbirth.

6. **Septic pelvic thrombophlebitis**: diagnosis of exclusion. Consider in cases of persistent febrile symptoms after having ruled out other causes of puerperal fever.

2. PROPHYLAXIS

Antibiotic prophylaxis significantly reduces the risk of endometritis after different procedures. It is indicated in:

- Caesarean delivery (main risk factor for endometritis)
  Antibiotic of choice: Cefazolin 2 g IV single dose.
- Forceps, manual removal of the retained placenta, manual exploration of the uterine cavity, or other manipulation of the postpartum uterine cavity.
  Antibiotic of choice: Cefminox 2 g IV single dose (greater anaerobic coverage than Cefazolin).

If allergic to penicillin: Clindamycin 600 mg IV + Metronidazole 500 mg IV.

3. DIAGNOSIS

3.1. ANAMNESIS

Identify maternal intrinsic risk factors, as well as risk factors related to childbirth (Table 2). In case of intrapartum fever, caesarean section, forceps, or manual removal of the retained placenta, confirm if the patient received antibiotic prophylaxis (drug, dose, duration).

Table 2. Risk factors for puerperal fever

RISK FACTORS	
MATERNAL	- Maternal immunosuppression (diabetes mellitus, immunosuppressive treatment, corticosteroids, HIV, systemic diseases - systemic lupus erythematosus, scleroderma-) - GBS positive - Obesity (surgical wound infection)
INTRAPARTUM	- Duration, time since amniorrhexis, prematurity - Caesarean section (emergency > failure to progress > elective) - Assisted vaginal delivery - Manual removal of the retained placenta - Manual exploration of the uterine cavity
POSTPARTUM	- Anaemia (Hb < 8 g/dl) - Seroma/haematoma on surgical wound, drainage, insufficient care of the surgical wound

3.2. PHYSICAL EXAMINATION

- **Physical examination by systems**: it is important to rule out any source of infection that justifies the fever (e.g. meningeal signs, adenopathies, ear-nose-throat examination, pulmonary auscultation, abdominal examination, signs of thrombophlebitis).
- **Complete gynaecological examination**: assessment of lochia, cervical mobilisation, ruling out adnexal masses, etc.

3.3. COMPLEMENTARY TESTS

- **Blood test**: complete blood count, CPR and coagulation. In case of suspicion of sepsis (obstetric q-SOFA: two or more SBP <90 mmHg / RF ≥25 rpm/maternal agitation or confusion), add lactate, liver and kidney function tests and acid-base balance (see specific protocol).

- **Transvaginal gynaecological ultrasound** (add transabdominal ultrasound in recent puerperium).

- **Urine culture**: it is appropriate to obtain the urine sample by spontaneous voiding.

- **Blood culture**: extracted preferably before the initiation of antibiotic therapy if it does not delay the start of treatment. If possible, two determinations (no need to wait between them), either from the catheter or from peripheral blood. In each determination, puncture a venous access on each arm (left/right).

- **In the absence of an apparent focus of fever**, or in case of suspicion of endometritis: perform an **endometrial culture** obtained by endometrial aspiration:
    - Prior to obtaining the sample, vaginal and cervical lavage with physiological saline solution.
    - Perform the endometrial aspirate with an endometrial biopsy cannula.
    - After removing the cannula, wash its external portion with physiological saline solution before introducing the sample into a sterile container.

  * Add Chlamydia CPR in endometrial aspirate: only in cases of suspected late-onset endometritis (> 1 week postpartum) and without clinical response to antibiotic.

- **In cases with a suspected focus of fever**, the appropriate specific cultures will be carried out:
    - **Surgical wound**: if possible, the sample will be obtained by aspiration of the wound instead of by smear, due to the higher yield of the aspiration. Perform nasal swabs for ESBL if swabs cannot be taken from the surgical site.
    - **Breast milk**: see specific protocol.

  * Consider performing imaging tests in cases with a suspected focus of fever (e.g. chest X-ray, abdominopelvic CT).

- If ESBL risk factors (Annex 1), a **rectal swab** should be obtained.

- Do not routinely perform vaginal or endocervical smears, due to their non-specificity.

4. HOSPITAL ADMISSION CRITERIA

- Suspected endometritis.
- Suspected intra-abdominal collection.
- Clinical picture compatible with retained placental fragments (e.g. persistent metrorrhagia, uterine subinvolution, etc.).
- Maternal risk factors: immunosuppression, treatment with immunosuppressants, diabetes mellitus, puerperal anaemia (defined by haemoglobin lower than 8 g/dl), corticosteroids, systemic diseases (e.g. systemic lupus erythematosus, scleroderma, etc.).
- Poor general condition or criteria for suspicion of sepsis (see specific protocol).
- Laboratory alarm signs: leucocytosis greater than 20,000 leukocytes, marked deviation to the left, very high CRP (>15-20 mg/dL or >150-200 mg/L), signs of sepsis (e.g. leukopenia, coagulation alterations, etc.).
- Impossibility of coming to the hospital as outpatient treatment or follow-up.
- Social factors (e.g. language barrier that makes communication and adherence to treatment impossible, etc.).
- Intolerance to oral treatment.
- Outpatient treatment failure.

5. TREATMENT

- Antipyretic treatment if fever spikes:

  - Paracetamol 1 g IV
  - 2nd line or in case of allergy to paracetamol:
  - Non-lactating women: Dexketoprofen 50 mg IV.
  - Lactating women: restrict the use of Metamizol, given the increased risk of acute lymphocytic leukaemia in neonates. Evaluate risk-benefit.

- Low Molecular Weight Heparin in prophylactic doses during hospitalisation due to puerperal fever and at least until achieving 10 days of treatment.
- Antibiotics according to the cause (e.g. go to specific protocol according to focus: mastitis, urinary tract infection, etc.).

5.1. TREATMENT FOR PUERPERAL ENDOMETRITIS

- **Hospital admission** in all cases.

- **Intravenous antibiotic treatment**
  - 1st choice: Piperacillin-Tazobactam 4g/6h IV or Ceftriaxone 1g/12-24h IV + Metronidazole 500 mg/8h IV.
  - If ESBL risk factors are present: Ertapenem 1g/24h IV.
  - If allergy to penicillin: Tigecycline 100 mg IV on the first dose followed by 50 mg/12h IV + Metronidazole 500 mg/12h IV.
  - If Chlamydia CPR is positive (only performed in cases of late-onset endometritis, >1 week postpartum) and there is an absence of clinical response to the antibiotic: add Azithromycin 1g/week orally (PO) for 3 weeks.
    - IV alternative: Azithromycin 500 mg/24h IV for 2 days.
    - Alternative in case of allergy or intolerance: Doxycillin 100 mg/12h PO for 7 days. In this case it would be necessary to discontinue breastfeeding for the duration of the treatment.

- **Aspiration curettage** in case of:
  - Ultrasound signs compatible with retained placental fragments (thickened heterogeneous endometrium, evidence of vascularisation in the Doppler study or presence of positive beta-hCG hormone).
  - Presence of haematometra or clots.

  Considerations for aspiration curettage due to puerperal endometritis:
  - Curettage should be performed after a minimum of 6-12 hours of IV antibiotic.
  - The use of drugs for cervical dilation (misoprostol) or uterotonics is not indicated.
  - The aspiration cannula will be used preferably, minimising the use of the Recamier curette.
  - Send the material obtained for microbiological study (fresh in a sterile container) and pathological study (formaldehyde).

CLINICAL FOLLOW-UP:

Antibiotic IV therapy will be maintained for 24h if fever is not present. De-escalate or suspend the empirical antibiotic regimen based on clinical evolution and microbiological results.

- **Satisfactory clinical evolution**
  - Complete 7-10 days of oral antibiotic (decide duration depending on the initial response to the antibiotic and general/analytical status).
  - The patient can be discharged with empirical oral treatment even if the results of the cultures are not available. It is advisable to schedule a follow-up appointment for culture results and assessment of clinical evolution.
  - If there were no signs of sepsis in the first analysis, there is no need to do serial blood tests.

- **Persistence of fever:**
  Consider treatment failure if there is no clinical improvement and/or fever persists after 72 hours of treatment. If fever persists, it is recommended to discuss the case with the infectologists/microbiologists. We should:
  - Reassess the source of infection.
  - Check the results of cultures.
  - Consider performing imaging tests to rule out other focus of fever: retained placental fragments, necrosis, infected haematomas, abscesses, septic thrombophlebitis, etc.
  - Change the antibiotic regimen for an alternative. It is recommended to discuss the case with the infectologists/microbiologists.
  - In the absence of other focus of fever, consider the possibility of septic pelvic thrombophlebitis. In case of confirmation, it is recommended to decide the treatment regimen together with the Haemostasis service.

5.2. TREATMENT OF INTRA-ABDOMINAL COLLECTIONS

- **Hospital admission** in all cases.

- Perform imaging test: **thoracoabdominal CT** in case of suspicion.

- Consider percutaneous drainage based on location, accessibility and size.

- Consider surgical drainage if non-candidate for percutaneous drainage/non-response to antibiotic therapy.

- **Intravenous antibiotic treatment** (same regimen as in Puerperal Endometritis)
  - 1st choice: Piperacillin-Tazobactam 4g/6h IV or Ceftriaxone 1g/12-24h IV + Metronidazole 500 mg/8h IV.
  - If ESBL risk factors are present: Ertapenem 1g/24h IV.
  - If allergy to penicillin: Tigecycline 100 mg IV on the first dose followed by 50 mg/12h IV + Metronidazole 500 mg/12h IV.

5.3. TREATMENT OF SURGICAL WOUND INFECTION (CAESAREAN SECTION OR EPISIOTOMY)

- Evaluate if the patient meets admission criteria. Always hospitalise if there is cellulitis.

- Check if correct tetanus vaccination.

- Antibiotic treatment

  A. OUTPATIENT TREATMENT: if admission criteria are NOT present:
  - 1st choice: Amoxicillin-clavulanic acid 875 mg/125 mg every 8h PO for 5-7 days.
  - If allergy to penicillin:
    - Episiotomy infection: trimethoprim/sulfamethoxazole 160 mg/800 mg every 12h PO + Metronidazole 500 mg/8h PO.
    - Caesarean section wound infection: Ciprofloxacin 750 mg/12h PO + Clindamycin 300 mg/8h PO.

  Consider IV route of administration of the first antibiotic dose in the emergency room.
  In all cases of outpatient management, it is advisable to schedule a follow-up appointment for culture results and assessment of clinical evolution.

B. Patients WITH CELLULITIS and/or other CRITERIA FOR HOSPITALISATION:
   - 1st choice: Piperacillin-Tazobactam 4g/6h IV. Consider associating Linezolid 600 mg/12h PO-IV in severe cases or in case of previous hospitalisation for more than 5 days.
   - If allergy to penicillin: Tigecycline 100 mg IV on the first dose followed by 50 mg/12h IV + Metronidazole 500 mg/12h IV.

Consider surgical wound debridement (caesarean section scar or episiotomy) in case of abscess or dehiscence of an infected scar.
In selected cases, with an optimal response to antibiotic treatment, it is possible to perform a new episiotomy when the signs of local infection disappear. The risk of recurrence does not increase if the infectious process is under control and, however, both aesthetic and functional results improve.

CLINICAL FOLLOW-UP:
The patient can be discharged after being afebrile for 48 hours and confirming a good evolution of symptoms. Upon hospital discharge, 7-10 days of oral antibiotic treatment will be completed (modifying the regimen according to the results of cultures and antibiogram).
   - 1st choice: Amoxicillin-clavulanic acid 875 mg/125 mg every 8h PO.
   - If allergy to penicillin: Clindamycin 300 mg/8h PO

Schedule the patient in nursing clinic if outpatient wound care is required.

5.4. TREATMENT OF PUERPERAL FEVER OF UNKNOWN ORIGIN
(including normal urine sediment analysis)

A. OUTPATIENT TREATMENT: if admission criteria are NOT present:
   - 1st choice: Amoxicillin-clavulanic acid 875 mg/125 mg every 8h PO for 5-7 days.
   - If allergy to penicillin: Clindamycin 300 mg/8h PO + Ciprofloxacin 750 mg/12h PO 5-7 days.

Consider IV route of administration of the first antibiotic dose in the emergency room.
In all outpatient cases, it is advisable to schedule a follow-up appointment for culture results and assessment of clinical evolution.

B. Patients that meet CRITERIA FOR HOSPITALISATION
   - 1st choice: Piperacillin-Tazobactam 4g/6h IV or Ceftriaxone 1g/12-24h IV + Metronidazole 500 mg/8h IV.
   - If ESBL risk factors are present: Ertapenem 1g/24h IV.
   - If allergy to penicillin: Tigecycline 100 mg IV on the first dose followed by 50 mg/12h IV + Metronidazole 500 mg/12h IV.

CLINICAL FOLLOW-UP:
The patient can be discharged after being afebrile for 48 hours and confirming a good evolution of symptoms. Upon hospital discharge, 7-10 days of oral antibiotic treatment will be completed (modifying the regimen according to the results of cultures and antibiogram).
   - 1st choice: Amoxicillin-clavulanic acid 875 mg/125 mg every 8h PO.
   - If allergy to penicillin: Clindamycin 300 mg/8h PO + Ciprofloxacin 750 mg/12h PO.

It is advisable to schedule a follow-up appointment for culture results (if not available at hospital discharge) and assessment of clinical evolution.

6. MANAGEMENT IN CASE OF TREATMENT FAILURE

Treatment failure should be considered if there is no clinical improvement and/or there is persistence of fever after 72 hours of treatment. In case of persistent fever, we should:

- Reassess the source of infection.
- Review the culture results.
- Consider performing imaging tests to rule out another focus of fever: retained placental fragments, necrosis, infected haematomas, abscesses, septic thrombophlebitis, etc.
- Change the antibiotic regimen for an alternative. It is recommended to discuss the case with the infectologists/microbiologists.
- Consider the possibility of septic pelvic thrombophlebitis. In case of confirmation, it is recommended to decide the treatment regimen together with the Haemostasis service.

ANNEX 1: RISK FACTORS FOR ESBL (Extended-Spectrum Beta-Lactamases) **COLONISATION**

1. Previous infection or colonisation in the last 6 months by ESBL (major criterion)

   OR

2. 2 or more of the following factors (minor criteria):
   - Comorbidity: Chronic renal failure, pre-pregnancy diabetes mellitus, Cardiopathy, Chronic Obstructive Pulmonary Disease.
   - Immunosuppression: neutropenia, transplant, corticosteroids (>20 mg/day of prednisone or equivalent for more than 2 weeks), immunosuppressants or cytostatic agents, HIV with <200 CD4+, primary immunodeficiencies.
   - Urinary catheter carrier.
   - Hospital admission for more than 72h within the previous 3 months.
   - Use of systemic antibiotic (oral or IV) for ≥ 5 days in the previous 3 months (frequent in patients with recurrent urinary tract infections).
   - Coming from endemic areas (Latin America, Caribbean, Asia, non-EU Mediterranean Region) having lived outside of those areas for less than 6 months.

ANNEX 2: PUERPERAL FEVER TREATMENT

Infectious Origin	Hospitali-sation	Antibiotic Regimen	Antibiotic regimen if allergic to Penicillin	Duration	Antibiotic regimen after discharge
- Puerperal endometritis (*Consider curettage) **- Intra-abdominal abscess** (*Consider drainage)	YES	Piperacillin-Tazobactam 4g/6h IV or Ceftriaxone 1g/12-24h IV + Metronidazole 500 mg/8h IV * If ESBL risk factors: Ertapenem 1g/24h IV * If late-onset endometritis with positive Chlamydia CPR, add Azithromycin 1g/week PO for 3 weeks	Tigecycline 100 mg IV on the first dose followed by 50 mg/12h IV + Metronidazole 500 mg/12h IV.	IV antibiotics for 24h without fever. Afterwards, complete 7-10 days of PO antibiotic	Change according to antibiogram, or: Amoxicillin-clavulanic acid 875 mg/125 mg every 8h * If allergic to penicillin: Clindamycin 300 mg/8h PO
Surgical Wound Infection	**NO** ADMISSION CRITERIA	Amoxicillin-clavulanic acid 875 mg/125 mg every 8h for 5-7 days	Episiotomy infection: trimethoprim/sulfamethoxazole 160 mg/800 mg every 12h PO + Metronidazole 500 mg/8h PO C-section infection: Ciprofloxacin 750 mg/12h PO + Clindamycin 300 mg/8h PO	7-10 days	Change according to antibiogram, or: Amoxicillin-clavulanic acid 875 mg/125 mg every 8h * If allergic to penicillin: Clindamycin 300 mg/8h PO
	WITH ADMISSION CRITERIA or CELLULITE	Piperacillin-Tazobactam 4g/6h IV +/- Linezolid 600 mg/12h PO-IV in severe cases or in case of previous hospitalisation for more than 5 days	Tigecycline 100 mg IV on the first dose followed by 50 mg/12h IV + Metronidazole 500 mg/12h IV.	IV antibiotics for 24h without fever. Afterwards, complete 7-10 days of PO antibiotic	
Fever of Unknown Origin	**NO** ADMISSION CRITERIA	Amoxicillin-clavulanic acid 875 mg/125 mg every 8h for 5-7 days	Clindamycin 300 mg/8h PO + Ciprofloxacin 750 mg/12h PO 5-7 days	5-7 days	Change according to antibiogram, or: Amoxicillin-clavulanic acid 875 mg/125 mg every 8h * If allergic to penicillin: Clindamycin 300 mg/8h PO + Ciprofloxacin 750 mg/12h
	WITH ADMISSION CRITERIA	Piperacillin-Tazobactam 4g/6h IV or Ceftriaxone 1g/12-24h IV + Metronidazole 500 mg/8h IV. * If ESBL risk factors: Ertapenem 1g/24h IV	Tigecycline 100 mg IV on the first dose followed by 50 mg/12h IV + Metronidazole 500 mg/12h IV.	IV antibiotics for 48h without fever. Afterwards, complete 7-10 days of PO antibiotic	
MASTITIS	Go to specific guideline				

PYELONEPHRITIS	Go to specific guideline