

TWO TWINS, ONE DISEASE, TWO OUTCOMES



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ANTENATAL HISTORY

- Monochorionic, diamniotic twins
 - Transfer for suspected TTTS at 23 weeks (FW: 524g vs 900g, Twin 1 - Doppler null)
 - G2P1 (previous C-section at 37w due to chorioamnionitis)
 - GBS + on vaginal swab (IAP given)
 - MRSA +
- At 28W : TTTS not confirmed: selective IUGR gr 2 (FW: 1100g vs 1700g)

BIRTH

At 32+0 weeks by C-section due to non-reassuring fetal monitoring and ascites of Twin1

- **TWIN 1**: subcutaneous oedema, pleural effusion, ascites, cardiac failure, dilatation de sinus saggitalis, dilated cerebral veins, maximal intensive therapy
- **TWIN 2**: on CPAP, good clinical condition

WHO WOULD START ANTIBIOTICS ?

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AMOXICILLIN + AMIKACIN STARTED FOR BOTH TWINS

AT 48 HOURS OF AGE

| | TWIN 1 | | TWIN 2 | |
|------------------------------|---------------------------------------|------|------------------------------------|------|
| Clinical condition | On CPAP, improving MRI D2 : no MAV | | On CPAP Good clinical condition | |
| CRP at birth - at 48 h | <0.6 | 7.6 | <0.6 | 1.9 |
| Platelets at birth - at 48 h | 108 | 98 | 115 | 116 |
| Neutrophil count - at 48h | 1.07 | 1.59 | 2.65 | 3.68 |
| Blood culture | Negative | | Negative | |

WHO WOULD CONTINUE ANTIBIOTICS FOR TWIN 1 ? FOR TWIN 2 ?

TWIN 1

Antibiotherapy for 7 days.

TWIN 2

Antibiotherapy stopped after 48h

TWIN 2 :

Continuous good clinical evolution

Full enteral feed (breast milk)

High Flow 4L/min FiO₂ 21%

AT DAY 10, EPISODE OF SUPRAVENTRICULAR TACHYCARDIA ...



CLINICAL AND BIOLOGICAL FINDINGS

- Day 10 - 07h:
 - **Supraventricular tachycardia**, corrected with vagal maneuvers
- Day 10 - 08h:
 - **Fever : 38,8°C**
- **Suspicion of Late-Onset Sepsis**
 - Blood samples taken
 - CRP = 60,7 mg/L
- **Antibiotic Therapy:**
Amoxicillin, Amikacin, Vancomycin
- Day 10 – 16h: **Onset of Seizures**
 - Eye deviation
 - Hypertonia
 - Desaturation



- **Suspected meningitis**
 - CSF samples
 - Antibiotics : shifted to Cefuroxim
 - Started on Acyclovir

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EVOLUTION TWIN 2

- **Meningitis and sepsis are confirmed !**
 - **Blood culture day 10** : positive for **Streptococcus Agalactiae**
 - **CSF culture day 10**: positive for **Streptococcus Agalactiae**
- **Respiratory and cardiac arrest at day 11**
 - Intubation, **resuscitation successful**
- **Seizures not improving with maximal therapy**
- **Absence of brain activity on the EEG at day 20**
 - **End of treatment and end-of-life support** decided by the team and parents



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TWIN 1 AT THE SAME TIME (DAY 11) ⁷

Currently:

- On high flow therapy at 3 L/min - FiO₂ 21%
- Fully enterally fed by breastmilk (initially 7days of TPN)
- Good evolution

Some tests :

- MRSA swab negative
- CRP 2.3; 2.4 mg/L
- Lactate 1.6; Glu: 76
- Plt: 291 x10³; Neutrophil: 3.07 x10³

**WHO WOULD TREAT
TWIN 1?**

We choose not to treat him

BUT ...

**ON DAY 24, TWIN 1
PRESENTS WITH
TACHYCARDIA AND ...**

A cervical cellulitis.



DAY 24 - WOULD YOU TREAT TWIN 1 NOW?

- Already had a **full treatment of 7 days for a suspicion of early onset sepsis** (blood culture negative)
- Lost his brother to GBS sepsis and meningitis day 10-20
- **Tachycardia** and clinical **cellulitis**
- Mother **MRSA** +

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WHAT WE DECIDED :

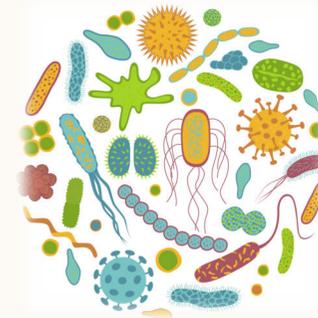
- To take samples :
 - Blood culture
 - CSF : failure
- To treat a suspicion of late onset sepsis :
 - Clinically suspected
 - CRP 3.4 mg/L

Antibiotics : Amoxicillin (high dose), Amikacin,
Vancomycin

- **Hemoculture is positive !**
... For *Streptococcus agalactiae*
- Amoxicillin sensitive
- Good clinical evolution with antibiotics



MORE TESTS:



- Analysis of the strains in the **blood cultures of TWIN 1 and TWIN 2**
- Analysis of the strains in the **CSF of TWIN 2**
- **Maternal milk culture**

- **Blood cultures:**
 - Streptococcus agalactiae positive:
Strain 3
- **CSF of TWIN 2:**
 - Streptococcus agalactiae positive:
Strain 3
- **Maternal milk:**
 - Streptococcus agalactiae positive:
Strain 3
 - >100 000 colonies/mL

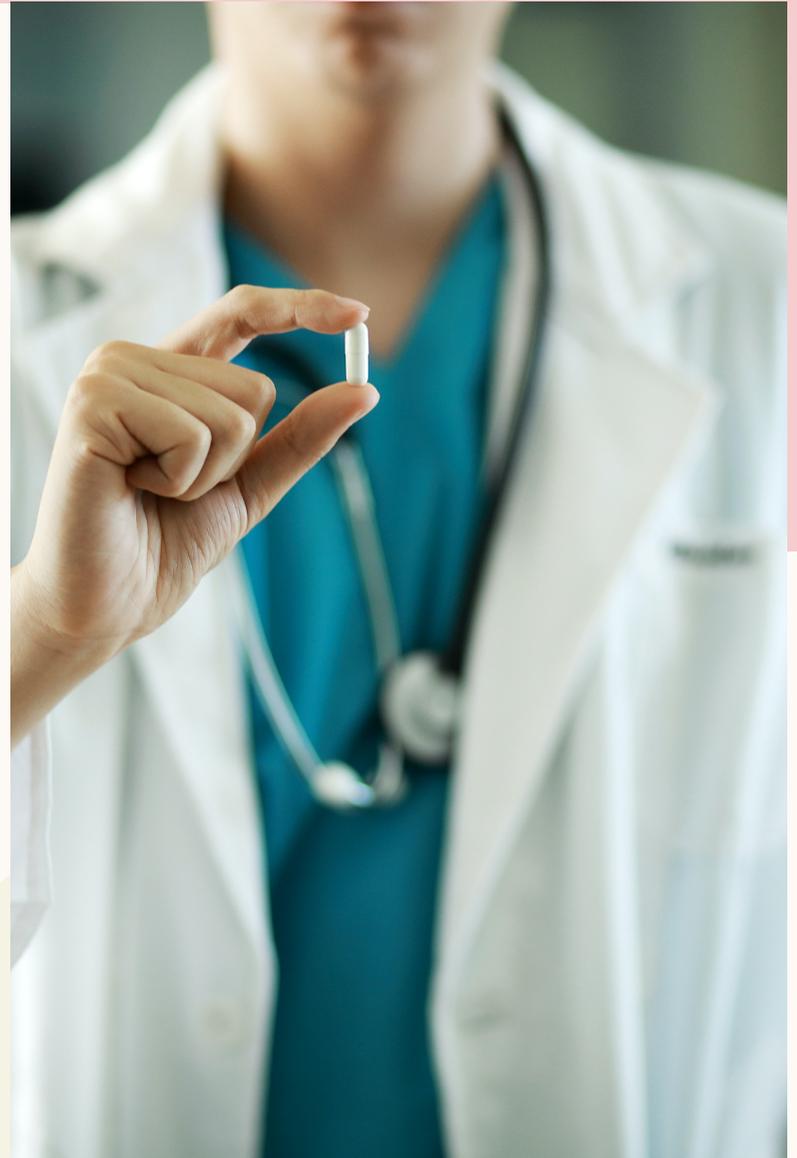
Blood cultures, CSF and maternal milk **positives** with the **same strain** of Streptococcus agalactiae :
Strain 3

- **Hyper-virulent strain** described in literature

WHAT DO WE DEAL WITH?

LATE ONSET SEPSIS

- **RECURRENCE OF EARLY ONSET SEPSIS – STILL VERTICAL TRANSMISSION ?**
- **LATE ONSET SEPSIS DUE TO HORIZONTAL TRANSMISSION ?**



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BUT IS IT REALLY THE END OF STORY? DAY 59

14

- Presented at the emergency unit with **loss of appetite and drowsiness**
- Admission to pediatric ward and **prompt antibiotics**
- Blood culture positive : **Streptococcus agalactiae Strain 3**
- **Treatment of 21 days** – STOP maternal milk
- **No more episode of sepsis** after 3 months of age



TAKE HOME MESSAGE



- LOS due to GBS can be **recurrence of EOS** or due to **horizontal transmission**
- If a twin has a GBS sepsis, the other twin has higher risk too, but **no preventive treatment is recommended.**
- Even if the mum's milk is positive for GBS, it is **not recommended to stop breastfeeding or treat preventively**
- **Parental education** to recognize the signs of infection is crucial



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THANKS FOR YOUR ATTENTION !



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Sources :

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