

Webinar on Antibiotics Therapy for sepsis

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In this webinar, we shall learn about antibiotics for treating sepsis in neonates

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The learning objectives would be:

1. Why rational use of antibiotics?
2. Initial choice of antibiotics?
3. When to upgrade the antibiotics?
4. How long to give antibiotics?
5. What are the best practices we should learn?

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Excessive use of antibiotics leads to high risk of antibiotic resistance and higher risk of Invasive candidiasis, NEC and death

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Once decided to start antibiotics, let us now learn how to choose the initial antibiotics
The initial empiric choice of antibiotic should preferably cover both gram positive and negative bacteria.

In India, the bacterial and sensitivity profile of EOS and LOS are similar and hence no distinction is required in antibiotic choice between EOS and LOS

The suggested plan would be:

For community acquired sepsis, a combination of Ampicillin plus an aminoglycoside could be the empiric choice

If evidence of Staphylococcus infection is present such as skin lesions, Cloxacillin can replace Ampicillin

For hospital acquired sepsis, a combination of Cloxacillin or Ampicillin and an aminoglycoside could be the empiric choice.

The choice between cloxacillin and ampicillin would depend on the prevailing flora of the unit

However, it is crucial to avoid 3rd gen cephalosporins, carbapenems and vancomycin as first choice of antibiotics

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The next question is when one should upgrade the antibiotics to the next line

Consider upgrading in cases of worsening or absence of improvement after 48 hours

An early escalation may be considered if the newborn becomes extremely sick or deteriorates rapidly

Second line antibiotics should be based on the blood culture report (If available) and based on the sensitivity pattern of the unit

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Even though initiation and escalation may be done empirically, do not hesitate to down grade to a narrower spectrum antibiotic once the culture report is available

This de-escalation should be done even if the baby shows clinical response

Always use only one antibiotic to which the organism is sensitive

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In this slide, we will learn how long the antibiotics should be given

- 1) If meningitis is diagnosed – give for 21 days

- 2) If blood culture is positive – administer for 10-14 days
- 3) If blood culture is negative and the neonate presented with severe clinical signs such as shock, sclerema and DIC – consider a duration of 7-10 days
- 4) On the other hand, if blood culture was negative and the neonate had less severe clinical signs – consider stopping antibiotics by 5-7 days
- 5) In asymptomatic neonates with only risk factors and blood culture is negative, antibiotics should be stopped immediately

In all cases, keep in consideration, the status of clinical signs.

Consider stopping antibiotics in a baby in whom the clinical signs were less severe and show a rapid improvement within the 12-24 hours of starting antibiotics.

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It is vital to understand to reduce the duration of antibiotics

To facilitate this process, certain key steps are essential

1. First step is to collect blood culture reports on time; this can be done by calling the lab or starting a system of online reporting or SMS services
2. Once you get a report – trust your lab; even the best microbiology services have only up to 35% culture positivity rate; if reported negative – believe and stop ABs
3. Getting a faster culture report by using BACTEC or similar automated blood culture systems may help

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Do not give antibiotics in certain scenarios

These conditions are certain non-infectious conditions like asphyxia, meconium aspiration and prematurity and low birth weight

Certain procedures like exchange transfusion, central line insertion, endotracheal intubation and phototherapy

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Remember few best practices to rationalize the use of antibiotics

First, have a written antibiotic policy in the unit and strictly follow it. This policy should state when to give a drug, which drug to be given, how much and how long to be given. The policy should also have the provision to track the organism profile of the unit

Second – do not give prophylactic antibiotics and do not give parenteral antibiotics for superficial skin infections

Establish correct diagnosis with the help clinical and microbiological support

Do not forget to send blood culture before starting antibiotics

Prescribe right dose using drug formulary

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The take home messages are

Have a **written antibiotic policy** for your unit

Send blood culture before starting antibiotics

Based on culture and clinical signs, stop antibiotics at the earliest

Document: indication, review date and proposed duration

Follow right dose and frequency

Follow instructions for drug administration