

Module 15 : Neonatal Sepsis : Diagnosis and Management with injectable antibiotic

Session 2 : Treating neonatal sepsis with gentamicin

Day : 2 and 3

Time Required : 3 hours 35 minutes

Purpose

To enable ASHAs acquire the knowledge and skills needed to treat neonatal sepsis.

Objectives

At the end of the session the ASHA will be able to:

1. Determine the required antibiotic dosage.
2. Deliver the antibiotics to the infant by injection (gentamicin) and by mouth (cotrimoxazole).
3. Demonstrate her good communication skills in explaining the illness, in obtaining the parents' consent for treatment, and in advising on home care.

Materials

- Reading Material 1 : Treatment dose chart
- Reading Material 2 : Skills checklist : Injecting gentamicin
- Worksheet 1 : Case Studies
- Training Aid 1 : Answers to case study questions
- Gentamicin vials
- Insulin syringes
- Spirit
- Cotton balls
- Plastic box for used syringes
- Mannequines/dolls or mangoes, egg plant (brinjals) for injection practice
- Cotrimoxazole syrup bottles
- Spoons (5 ml)



5 ml spoon



Injection Gentamicin

Preparation

- Ensure availability of adequate copies of supplementary form booklet and reading material, depending on the number of trainees. Each ASHA should have one copy of both.
- Obtain and keep ready enough syringes and vials (water can be used so as not to waste gentamicin) for each ASHA to have her own set.
- Obtain and have ready the other material listed above for practice.

Training Methods

Presentation and Discussion : Sepsis management (50 min)

Instructions to Trainers :

1. Explain that the management of sepsis in the neonate has four parts:
 - Explaining the situation to parents and advising them to take the baby to hospital. If they are

unwilling to go to the hospital, getting their consent to treat the baby.

- Giving the treatment (i.e., the correct dose of medicines for the necessary number of days).
- Giving the parents advice on how to care for the baby at home and while treating the baby, visiting the house twice daily making sure that good care is practiced.
- Filling in and maintaining the necessary forms.

Explain that in this session we will discuss the first three parts: **informed consent**, **sepsis treatment** and **home care advice**. Introduction to the forms and practicing to fill them in will take place in the next session.

2. Ask ASHAs to explain '**informed consent**'. (*Informed consent is explaining the seriousness of the disease to the parents and making sure they understand the risks involved and that they agree to the ASHA giving treatment at home.*) Why is this important? (*So that parents understand the benefits and risks of the proposed treatment and willingly agree for it.*)
3. Ask ASHAs why, in the case of sepsis, it is necessary to explain the situation to parents and to get their written consent for treatment. Allow them to discuss this freely for a few minutes. Listen to the answers. If ASHAs are having trouble doing this, you can remind them that sepsis is a life-threatening disease which is normally treated in the hospital. (*ASHAs should explain the seriousness of the disease to parents; sepsis can quickly kill the baby, and it is recommended that parents preferably take the baby to the hospital. If they are unwilling, the ASHA may treat the baby at home as a lifesaving measure if the parents sign an Informed Consent Form for the treatment after the risks have been clearly explained to them.*)
4. Explain that before starting treatment, the Informed Consent Form must be signed by at least one parent or the main caretaker of the infant. Ask ASHAs to refer to the Informed Consent Form in supplementary form booklet (although ASHAs will practice filling it in only in next Session).
5. Explain that **sepsis treatment** for the neonate is a combination of cotrimoxazole, which ASHAs are already using to treat sepsis, and gentamicin. Gentamicin is an antibiotic which is injected, while cotrimoxazole is an antibiotic that is taken by mouth. Together, these two drugs work well to cure the baby of sepsis.
6. Mention that injections are often given unnecessarily. There are many risks attached with injections: a wrong medicine may be given, or the wrong dose, or severe reaction to medicine, or the site where the needle went in may get infected. Because sepsis is a life-threatening disease, an injection of gentamicin is needed. The Neonatal Sepsis Diagnosis Form part of Home Visit Form is a tool to help ASHAs make the correct diagnosis so only those babies with sepsis needing the injection will get it.
7. Ask ASHAs to refer to the Dosage Sheet (see Content Box below) in Reading material 1.
8. Point out that the dose for gentamicin depends on the weight of the baby. When a baby has sepsis, the ASHA determines the exact dose according to the baby's last recorded weight.
9. Emphasize that the length of treatment for both gentamicin and cotrimoxazole is dependent on the length of gestation.
 - Preterm babies need both medicines for 10 days.
 - Full-term babies need both medicines for 7 days.
10. Explain that after the informed consent is given by parents, **the first doses of antibiotics should be given immediately**. Gentamicin is given once a day (by the ASHA) by injection. Cotrimoxazole is

given by mouth by the ASHA (or the mother if she has been properly taught and supervised) in the morning and evening. ASHAs have learnt and practiced giving cotrimoxazole.

11. Emphasise that the ASHA is to visit the home two times each day until the treatment is complete, which is 7 days for the full-term baby, and 10 days for the preterm baby.

Content Box :

Sepsis Treatment: Two antibiotics are needed : gentamicin and cotrimoxazole

1. Injection of gentamicin once a day

Weight of baby	Preterm: less than 8 months 14 days	Full-term baby or baby in 2 nd month
Less than (<)1500 gms	5 mg	8 mg
1500 to <2000 grams	6 mg	10 mg
2000 to <2500 grams	7 mg	12 mg
2500 to <3000 grams	9 mg	15 mg
3000 grams and over		18 mg
	Once daily for 10 days	Once daily for 7 days

2. Cotrimoxazole syrup two times a day

Full term: ¼ tsp twice a day for 7 days

Preterm: ¼ tsp twice a day for 10 days

12. Explain **the home care advice**, it is essential that the ASHA explain and demonstrate to parents how to care for their baby who is being treated for sepsis. Home care would follow similar advice for the high-risk baby (use the danger signs for baby health education card).
13. Explain that babies with sepsis are fragile and their condition can change rapidly. Their survival depends as much on successful management of everyday care issues such as breastfeeding and staying warm as on receiving proper medication. Be sure to:
 - Keep the baby warm.
 - Breastfeed often (every two hours).
 - Make sure the medication is being given.
 - Wash hands before touching the baby.
 - Call the ASHA immediately if the condition gets worse.
 - Take care of other infections such as umbilical, skin, eye.

Demonstration : Giving gentamicin and cotrimoxazole (30 minutes)

Instructions to Trainers :

1. Ask ASHAs to refer to the gentamicin injection checklist (provided in the reading material).
2. Explain that injecting gentamicin is similar to injecting vitamin K. There are two differences:
 - The gentamicin bottle has a rubber seal keeping the liquid medicine inside. (The vitamin K ampoule has a glass top that is broken off and the medicine pulled into the syringe directly.)

- Gentamicin comes in a vial that contains many doses of medicine and is used more than once (while the vitamin K ampoule is used once and discarded). Because gentamicin is used more than once, it is important to keep the vial sterile (clean the top with spirit before use, put only sterile needles through rubber seal, do not squirt medicine back in vial).
3. Show the gentamicin vial. Explain that a major difference between using this kind of vial and the glass ampoule holding vitamin K is how the medicine is drawn into the syringe. Explain that there is not much air in the vial and simply inserting the needle and trying to pull out medicine will be difficult. To get gentamicin out, you need to push in the same amount of air as the liquid gentamicin you will withdraw from the vial.
 4. Show ASHAs the insulin syringe. Explain that the gentamicin dose in milligrams (mg) corresponds to the numbers on the syringe. Example: For a full-term baby weighing 2,300 kg, the dose of gentamicin would be 12 mg. The liquid gentamicin would be drawn up to the 12 mark on the syringe.
 5. Have ASHAs read steps 6-12 on the gentamicin checklist.
 6. Demonstrate drawing medicine into the syringe. See steps 6-12.

6.	Take 3 rd cotton ball, soaked with spirit, and clean the top of vial.
7.	Remove the syringe from plastic package, check the syringe for seals and remove first the barrel cap and then the needle cap.
8.	Pull the white plunger back upto the mark of the required dose of gentamicin, so that the air comes into the syringe upto that mark.
9.	Push the needle into the vial through the rubber top and press the plunger to push air into the vial.
10.	Lift and invert the syringe and vial. Make sure the needle tip is inside the liquid. Pull back the plunger so that the medicine fills syringe a little more than the required dose mark.
11.	Withdraw the needle from the vial and then, with the needle facing upwards, flick the syringe so that the air bubble comes to the top.
12.	Push the plunger a little to expel the air bubble and any extra medicine. The black ring at the tip of the plunger in the syringe should be pushed upto the mark of the required dose. Now the syringe contains the exact amount of the required dose of gentamicin.

7. Remember to emphasize that the top of the vial (the rubber seal) must be wiped with a clean cotton ball soaked in spirit before inserting the needle each time. A 2 ml vial holds 80 mg of medicine. In a full-term baby, with more than 2 kg 500 grams weight, each injection is of 15 mg. Hence the vial will last for 5 injections (Medicine required for the remaining 2 days can be taken from a new vial). In the smallest preterm baby requiring 5 mg of gentamicin each day, the vial will last for 10 days and remaining can be used for another baby).
8. Have ASHAs read the whole checklist out aloud (each one reading a step or two).
9. Demonstrate the whole checklist, reading each step out loud as you perform it. ASHAs observe while referring to the checklist in the reading material. Use the example of a 2,800 kg full-term baby (draw up 15 mg, to the 15 mark on the syringe).
10. Check what the cotrimoxazole dose is. ASHAs are already using cotrimoxazole for treating sepsis. Measure ¼ teaspoon of the syrup and give to baby in the morning and evening.
11. After the demonstration, check for any questions and clarify any doubts.

Practice (45 minutes)

Instructions to Trainers :

1. Divide ASHAs into groups of 3-4. Distribute enough syringes and vials (water can be used for the demonstration so as not to waste gentamicin) for each ASHA to have her own set. Also distribute cotrimoxazole & spoons.
2. Have each ASHA first practice drawing the correct amount of liquid into the barrel of the syringe. They should practice with each of the possible doses (5 mg, 6 mg, 7 mg, 8 mg, 9 mg, 10 mg, 12 mg, and 15 mg).
3. Then have each ASHA simulate giving an injection to a baby doll while following the checklist; others in the group observe with the checklist. Pay attention to:
 - choosing injection site
 - angle of needle entering skin (90° - like a straight tree growing out of the ground)
 - depth to which the needle enters (complete length of needle)
 - withdrawing the needle
 - after care
4. Circulate in the room assisting ASHAs if necessary.

Case Studies/Small Groups (45 minutes)

Instructions to Trainers :

1. Keep ASHAs in the same groups. Distribute the case studies Worksheet 1.
2. Have ASHAs work together to decide on proper doses, visiting schedules and home care advice. (20 minutes)
3. Regroup and go over the answers in the larger group.
4. Encourage questions.

Role Plays in Large Group (45 minutes)

Instructions to Trainers :

1. Have each group present a short role play based on one of the case studies (or cases they have made up), emphasizing: how to explain to parents that the baby has sepsis, asking them to sign the consent form, and giving home care advice.
2. Discuss the role plays giving constructive suggestions to improve communication skills and how information should be given. Praise ASHAs when communication skills are demonstrated well and the content of their message is appropriate.

Summary

- Ask an ASHA how does she feel after learning to give injection gentamicin.
- Ask one ASHA why gentamicin should not be given to anybody else than the baby with sepsis.
- Have an ASHA state how will she find the correct dose of gentamicin for a particular baby.
- Make corrections if any and add missed information.
- Praise ASHAs for their good work.

Evaluation of the session

Objectives	Assessment Method	Output
Determine the required antibiotic dose.	Case studies.	Case study questions solved in small groups of ASHAs
Deliver the antibiotics to the infant by injection (gentamicin) and by mouth (cotrimoxazole).	Simulated demonstration. Each trainee demonstrates how to give gentamicin injection correctly, using the skills checklist. Each trainee demonstrates how to give cotrimoxazole correctly.	Observations by the trainer of the demonstration practice by ASHA with the help of checklist.
Demonstrate good communication skills in explaining the illness to parents, obtaining their consent for treatment, and giving advice on home care.	Role plays.	Observation of the role plays by the trainers