## Case Study 2-Neonatal Group B Strep Pneumonia

### Case 2:

**Aim:** to recognise a baby with a serious illness

**Learning Objectives:**
- Obtain history
- Obtain observations
- Refer appropriately
- Communicate effectively

**Equipment:**
- Facilitator care
- Player 1 card-Woman
- Player 2 card-RM
- Medication chart
- Blood test results
- Communication care

**Roles in the scenario:**
1. Woman
2. Registered Midwife
3. Obstetric/neonatal registrar???
4. Optional
   - Additional midwives
   - Consultant
   - Partner
   - Relative

### Scenario

**Baby-Nathan Jones**  
**Woman-Cathy Jones**  
**UR 2001101**

Nathan is 2 days old. He was born at 38+2 weeks by normal vaginal birth. Cathy’s membranes were ruptured for 20 hours. High vaginal swab at 36 weeks was +ve for group B strep. Cathy was given prophylactic antibiotics when her membranes ruptured. Nathan is Cathy’s second baby. Cathy is breastfeeding.

- Nathan was commenced on 4 hourly observations of temp, RR and HR for 24 hours
- Then 8 hourly observations
- On day 2 Nathan was very lethargic and not feeding well

**To start the scenario**
1. Assign roles to each player
2. Set up the room with baby in open cot
3. Give the first player card to the player designated as the mother
4. Give the second player card to the player designated as the midwife
5. Allow the scenario to build on itself prompting other players to enter as called for or prompt if necessary
6. Supply players with further information such as medication charts, observations or blood results when asked
**During the scenario**

If the RM needs prompting
1. **What assessments would you make on the baby?**
   - Assess the baby for signs of respiratory distress/sepsis
   - Vital signs (Increasing NEWS score)

2. **Who would you notify? Why?**
   - Team Leader or CMC
   - Registrar

Facilitator should place RM and Registrar back to back to simulate phone conversation

In the phone call the RM should:
- Describe the woman’s/baby’s history
- Indicate the severity of symptoms and increasing NEWS score
- State what she would like the registrar to do ie. review the baby

Registrar comes to review the baby:
1. **What information do you require from the RM?**
   - Observations, increasing NEWS score

2. **What assessment would you do? (Prioritise)**
   - ABC
   - Physical examination
   - Blood culture, CRP, Cultures, FBC, BSL

3. **What is your management plan for the baby?**
   - Consult neonatal registrar/neonatologist
   - IV access
   - Antibiotics - ampicillin/gentamicin
   - Admit to NICU
   - Provide respiratory support as required
   - Provide explanation to the woman

Neonatal Registrar comes to review the baby:

1. **What information do you require from the obstetric registrar?**
   - Assessment
   - Vital signs

3. **Who would you notify?**
   - Fellow/Consultant

4. **What is your management plan for the baby?**
   - Admit to NICU
   - Insert IV
   - Commence IV fluids and antibiotics
   - Observations and monitoring
   - Respiratory support if required

Questions

1. **What are your next actions as a group?**
   - Notify
   - Transfer to NICU
   - Notify NICU team leader
   - Explanation to parents

To summarise ask the group

1. **What they thought went well?**
2. **What suggestions would they make to improve their roles?**
Case Study 2 (Group B strep)

Facilitator Card

CASE 1 (Group B Strep)

Key points in this scenario:
- Identify the risk factors for group B strep
- Recognise the baby is deteriorating and when to refer a registrar
- Identify changes in the neonatal condition

- Nathan was born at 38+2 weeks gestation and is now 2 days of age
- His mother has a history of +ve group B strep LVS and was treated according to the SOP Group B strep management, with IV ampicillin 1gm during labour.
- Nathan had 4 hourly observations for 24 hours and all were within normal limits. On day 2 he is on 8 hourly observations.
- At 0800 hours Nathan’s NEWS score was 1 due to mild hypothermia he was warmly wrapped
- At 1400hrs his NEWS score was 4

Important Points
- Babies with group B strep can become seriously unwell very quickly
- All babies born to women who have +ve swabs for group B strep must be observed according to the SOP
- Signs and symptoms of Group B strep sepsis/pneumonia include-unstable temperature, respiratory distress, apnoea, poor feeding, cyanosis, desaturations, lethargy
- Group B strep sepsis often presents with a rapid onset and sudden deterioration
- Prophylactic antibiotic may not protect all babies from developing Group B strep sepsis/pneumonia
- Ensure compliance with NEWS
Case Study 2

Player 1 Card

Woman-Cathy

You are a G2 admitted at 38+2 weeks gestation with ruptured membranes. At 36 weeks gestation you had a LVS which was +ve for group B strep.

You received IV antibiotics during labour and birthed a male baby (Nathan). At delivery Nathan had good apgars, was vigorous and breast fed well. Nathan was well until day 2 when he became lethargic and did not feed well.

Case Study 2

Player 2 Card

Midwife

You are caring for Nathan who was born at 38+2 weeks gestation to a woman who had a +ve LVS for group B strep at 36 weeks gestation.

Membranes ruptured 20 hours before delivery. She received IV antibiotics during labour.

Observations on Nathan were performed as per the SOP Group B Strep management 4 hourly for 24 hours. NEWS scores were 0 for over 24 hours. On day 2 Nathan’s NEWS was 1 and then 4 6 hours later.
### Blood results for Nathan

<table>
<thead>
<tr>
<th>CRP</th>
<th>Hb</th>
<th>WCC</th>
<th>Plat</th>
<th>Blasts</th>
<th>Mye</th>
<th>meta</th>
<th>Bands</th>
<th>Neuts</th>
<th>Lymph</th>
<th>BSL</th>
<th>Bld Culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>54</td>
<td>142</td>
<td>11.5</td>
<td>69</td>
<td>.16</td>
<td>.16</td>
<td>.16</td>
<td>2.4</td>
<td>8.78</td>
<td>2.44</td>
<td>2.2</td>
<td>+ve grp B strep</td>
</tr>
</tbody>
</table>

### Normal Values

<table>
<thead>
<tr>
<th>CRP</th>
<th>Hb</th>
<th>WCC</th>
<th>Plat</th>
<th>Blasts</th>
<th>Mye</th>
<th>meta</th>
<th>Bands</th>
<th>Neuts</th>
<th>Lymph</th>
<th>BSL</th>
<th>Bld Culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>155-210</td>
<td>10-26</td>
<td>150-400</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0-0.5</td>
<td>7-14.5</td>
<td>2-11.5</td>
<td>&gt;2.6</td>
<td></td>
</tr>
</tbody>
</table>

Case study 2 – Neonatal – Nathan
Case study 2 – Neonatal – Nathan
### Neonatal Risk Assessment

To be attended within one hour of birth

<table>
<thead>
<tr>
<th>Risk Factor Assessment</th>
<th>Action / Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neoplasms</td>
<td>Refer to Neonatology</td>
</tr>
<tr>
<td>Gestational age ≥ 20 weeks</td>
<td>[Yes] No</td>
</tr>
<tr>
<td>Birth weight ≥ 90th percentile</td>
<td>[Yes] No</td>
</tr>
<tr>
<td>Birth length ≥ 90th percentile</td>
<td>[Yes] No</td>
</tr>
<tr>
<td>Birth head circumference ≥ 90th percentile</td>
<td>[Yes] No</td>
</tr>
</tbody>
</table>

### Neonatal Birth Review

**Time of Birth:** 23:59

<table>
<thead>
<tr>
<th>Type of Birth</th>
<th>Appear</th>
<th>Purity</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>NVR</td>
<td>Labour</td>
<td>2</td>
<td>35</td>
</tr>
</tbody>
</table>

**Birth Weight:** 3020 grams

- **Head Circumference:** 35 cm
- **Length:** 52 cm
- **Appear:** Labour
- **Purity:** 2
- **Classification:** 35

**Blood Group:** O +ve

**Birth feed:**
- **Hypothermia B given:** [Yes] No
- **Birth feed Vitamin K given:** [Yes] No

**Birth details:**
- **Time of first feed:** ...

**Cord gas:**
- **O₂:** ...
- **CO₂:** ...
- **pH:** ...
- **base excess:** ...

**Gestational age (GA) and sex:**
- Male

**Anomalies:**
- None

**Complications:**
- None

**Nursing care:**
- None

**Additional comments:**
- None

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**Case Study 2 – Neonatal – Nathan**