Countess of Chester Hospital NHS
NHS Foundation Trust

Mortality Review

Badger ID PD	**Gestation: 33+2 triplet**	**Hospital acquired infection**
Birth weight: 2020g	**Sex: M**	**No**
Child O		
Date of birth: PD **June 2016**	**Time of Birth: 1424**	
Date of Admission: PD **June 2016**	**Time of admission: 1445**	
Date of death: 23rd June 2016	**Time of death: 1747**	

Cause of death (as noted on death certificate): Coroner's PM:

1a Fresh bleeding into abdominal cavity due to
1b Rupture of sub-capsular haematoma of liver
1c To be established on full histology
Inquest has been opened.

Summary: 33^{+2} triplet 2, generally well and stable on optiflow and enteral feeds until day PD when he suddenly deteriorated with apnoea, bradycardia and abdominal distension. Did not respond to resuscitation. Subsequent PM showed a ruptured sub-capsular haematoma of liver.

Antenatal history: Normal triplet pregnancy. AN scans normal, no risk factors for infection. Antenatal steroids given. Regular reviews in pregnancy. Elective CS booked for maternal discomfort. Baby was not breech.

Delivery and Resuscitation: Born in good condition, cried immediately, dried wrapped + hat. Good tone, colour and respiratory effort, HR>100. In 30-35% oxygen at 7min. Transferred to NNU on resuscitaire with mask PEEP 5cm 35% FiO2. Shown to Dad and updated.

Initial stabilisation and care:
On arrival sats 85% in FiO2 40%, RR 70/min, temp 37.0
Plan for nCPAP,% iv dextrose, Vit K,FBC, DAT, CRP (1), gas (pH 7.26. Lac 2.0). BenPen and gent given at 1hr 20 min. Caffeine started.

Date and time:	**Continuing care:**
22nd June 16 Day PD	
1000	Consultant WR: nCPAP in air, glu stable, iv 10% dextrose. Plan to trial optiflow, start PN, U and E, Cranial USS.
1155	Cranial USS normal.
1700	2nd CRP 1. Antibiotics stopped at PD hrs.
23rd June 16 Day PD	
0532	Gas: pH 7.371, pCO2 5.31, lactate 2.3. Optiflow reduced at 0630
0732	Nurse notes abdomen looks "full and slightly loopy". Appeared uncomfortable after a feed. Reg review: Abdo soft, doesn't appear in discomfort on examination. To continue to feed but monitor. No reg record in notes of this episode.
0930	WR: Optiflow in air, cap gas normal; DEBM by NGT increasing to 90ml/kg/d. Trace of aspirates, some bilious. PU and BO.Bili below treatment line. Examination normal – abdo full but not distended.

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After death/debrief/counselling/PM/duty of candour etc: Hot debrief immediately after resus. Bereavement pathway followed. Pm results as above.

Tick relevant Box		
Grade 0		No suboptimal/substandard care
Grade 1	**x**	Suboptimal care, but different management would have made no difference to the outcome
Grade 2		Suboptimal care, different care may have made a difference (possible avoidable death)
Grade 3		Suboptimal care, different care would reasonably be expected to have made a difference (probably avoidable death)

Lessons Learnt/Actions

1. No definite indication for commencing iv antibiotics after birth. Reason given was respiratory distress in preterm infant requiring CPAP. Cautious approach to starting antibiotics would not have caused harm.
2. Decision on day PD to start TPN. No indication for this based on criteria of <1200g or <32 weeks but may have fulfilled criteria of unlikely to be on full enteral feeds by 7 days of age. Decision to start TPN should have been followed by decision to insert a peripheral long line or UVC.
3. No record made by registrar of his examination at 0732 on 23rd Jul.
4. Nursing notes usually entered at end of shift onto Meditech. Record of care entered in 3 different areas: Meditech, case notes and Badger net. Simplification of note keeping and anything that might help nursing staff enter notes more contemporaneously would be helpful.
5. All radiographs to be reviewed again in view of probable enlarged liver and importance of timing of films taken.
6. To request review by obstetric team regarding delivery and possibility of liver sub-capsular haematoma occurred in perinatal period.
7. Email from Coroner's officer regarding parents' concerns was discussed. DEBM that triplets received unlikely to be contributory but batch has been isolated and will be analysed. Alleged consultant cough into hands and examined baby without washing hands first – unlikely to be contributory to outcome but has been discussed with consultant and clinical lead.
8. Areas of good practice included excellent medical and nursing documentation of care around the time of the acute deterioration. Good practice of having parents present during resus, communication with them and timely baptism. 3 consultants present for most of resuscitation. Good team working.
9. There is uncertainty regarding cause of death as Child O deteriorated and received antibiotics, blood tests and an AXR which did not seem to show any evidence of hepatic enlargement at that time.

Reviewers: S Brearey, E Powell, S Williams, Y Griffiths, Doctor U, Doctor ZA, H Cooper

Date: 5th July 2016