Standard Operational Procedure for Prevention of Early Onset Neonatal Group B Streptococcal Disease

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1. Purpose/Background:

This document aims to guide members of the multidisciplinary team on the prevention of early onset neonatal Group B Streptococcal Disease (EOGBS).

2. Scope:

This SOP is for use by all Obstetricians, Paediatricians and Midwives, and it applies to all women and infants cared for by the maternity services at St Marys Hospital.

3. Responsibilities:

All medical and midwifery staff have a responsibility to:

- Access, read, understand and apply this guideline.
- Review the guideline in line with trust and national recommendations.
- Ensure that all relevant staff can access the guideline.

4. Procedure:

Antenatal care

- All women should be provided with the Prevention of Early Onset GBS Disease Leaflet.
- Universal bacteriological screening is not recommended.
- A maternal request is not an indication for bacteriological screening.
- Women with a positive GBS specimen (urine or vaginal swab) in the current pregnancy will be contacted by the antenatal clinic/community coordinator/ or community midwife. An alert sticker should be placed in the hard copy of the woman's notes, and the hand held notes at the earliest opportunity to ensure early identification on presentation in labour.
- Women identified with a GBS urinary tract infection during pregnancy (growth of greater than 10^5 cfu/ml) should receive the appropriate antibiotic treatment and offered Intrapartum Antibiotic Prophylaxis (IAP).
- At the next antenatal appointment, the community midwife will document the discussion and the decision whether the woman will

require antibiotics in labour. If the woman wishes to discuss further, a consultant appointment can be offered.

- Women with a previous baby affected by GBS disease (early or late onset) should be offered IAP irrespective of carrier status in this pregnancy.
- Explain to women with a history of GBS colonisation in a previous pregnancy which did not result in a neonatal infection, that the likelihood of maternal GBS carriage in this pregnancy is 50%. Discuss the option of IAP, or offer Enriched Culture Medium (ECM) swab at 35-37 weeks gestation or 3-5 weeks prior to the anticipated delivery date. Women with multiple pregnancies should be offered ECM at 32-34 weeks.
- When testing for GBS carrier status, a swab should be taken from the lower vagina and the anorectum. A single swab (vagina then anorectum) or two separate swabs can be used. The clinician should indicate that the swab is being taken for GBS. If processing is delayed, specimens should be refrigerated.
- IAP should be offered if GBS vaginal/rectal colonisation is detected incidentally in the current pregnancy. Antenatal treatment is not recommended, as it does not reduce the likelihood of colonisation at the time of delivery.
- Membrane sweeping is not contraindicated in women who are carriers of GBS.
- Specific antibiotic prophylaxis for GBS is not required for women undergoing planned caesarean section in the absence of labour and with intact membranes.

Management of Preterm Labour (including rupture of membranes) to reduce the risk of early-onset GBS (**EOGBS) disease.**

- Bacteriological testing for GBS carriage is not recommended for women with confirmed preterm rupture of membranes.
- IAP should be given once labour is confirmed or induced irrespective of GBS status.

- The perinatal risks associated with preterm delivery at <34 weeks of gestation in women with evidence of colonisation are likely to outweigh the risk of perinatal infection. For women at >34weeks of gestation, it may be beneficial to expedite delivery if a women is a known GBS carrier.

Management of Term Labour (including rupture of membranes) to reduce the risk of EOGBS disease.

- Birth in a pool is not contraindicated if the woman is a known GBS carrier, provided she is offered appropriate IAP. Care should be taken in avoiding wetting the intravenous access, as this is a potential site for infection for the mother.
- Method of induction should not vary according to GBS carrier status.
- Women who are known GBS carriers with confirmed rupture of membranes at >37 weeks of gestation, should be offered immediate IAP and induction of labour as soon as reasonably possible.
- **Benzylpenicillin 3gms IV** should be administered as soon as possible after the onset of labour or artificial rupture of membranes and subsequently **1.5gms IV** every 4 hours until delivery.
- In women with known Penicillin allergy (not severe), **Clindamycin 900mgs IV** every 8 hours should be administered until delivery.
- Women with evidence of severe penicillin allergy, should be administered **Vancomycin (Consult with the pharmacist Microbiologist on call note that IV vancomycin is given according to the patients weight and titrated to the creatinine clearance. This MUST be given as a SLOW IV infusion) (see appendix A)**. Vancomycin should be given in the maintenance dose until the baby is born
- Women in labour with a pyrexia of 38°C or greater and without known GBS colonisation should be offered a broad spectrum antibiotic regimen which should cover GBS in line with local microbiology sensitivities.

- There is no evidence to support continuous electronic fetal monitoring where the mother has tested positive for GBS in the absence of other risk factors.
- Women with a known GBS colonisation who decline IAP should be advised that the baby should be closely monitored for 12 hours after birth, and discouraged from seeking very early discharge from the maternity hospital (this is a red flag for the paeds and the baby is likely to require IVABS).

Management of the newborn baby.

- Parents and carers should seek urgent medical advice if they are concerned that the baby is showing abnormal behaviour, unusually floppy, developed difficulties with feeding or not tolerating feeds, has an abnormal temperature unexplained by environmental factors (<36 degrees or higher than 38 degrees), has rapid breathing or a change in skin colour.
- Babies with clinical signs of EOGBS disease should be treated with penicillin and gentamicin within an hour of the decision to treat.
- Term babies whose mothers have received adequate IAP more than 4 hours before delivery do not require extra observations.
- A well-baby at risk of EOGBS disease of women who have not received adequate IAP, and the baby of a mother who has had a previous baby with GBS disease should be evaluated at birth for clinical indicators of neonatal infection and have observations at 0, 1 and 2 hours and the 2 hourly until 12 hours of age.
- Postnatal antibiotic prophylaxis is not recommended for asymptomatic term infants without known antenatal risk factors

5. Related Documents:

Patient Information: The RCOG leaflet.

6. Auditable standards

What aspects of compliance with the document will be monitored	What will be reviewed to evidence this	How often	Sample size	Who will co-ordinate this	Who will they report to
Have appropriate antibiotics been given	Maternal notes	Not less than 2 yearly	10 sets	Audit midwife	MCSG/ Audit Meeting

7. References:

RCOG (2017) Prevention of Early–onset Neonatal Group B Strephtoccocal Disease. Accessed at https://obgyn.onlinelibrary.wiley.com/doi/full/10.1111/1471-0528.14821

8. Document History

Date of issue	Version No.	Next review date	Date Approved	Director Responsible for change	Nature of change
Oct 2009	5.0	Oct 2009	Oct 2006		
August 2010	6.0	August 2010	August 2009		Maternity CSG – short review date
October 2014	7.0	October 2014	October 2011		Review no changes
November 2015	8.0	November 2015	November 2012		Ratified maternity CSG
February 2016	9.0	February 2019	February 2016	Clinical Director of SWCH	Reviewed with no changes – maternity CSG
August 2018	10.0	February 2019	August 2018		Reviewed following updated RCOG guidelines
October 2019	SOP 1	October 2022	October 2019		Approved by Maternity CSG

Appendix A

Vancomycin Protocol

VANCOMYCIN PROTOCOL

- Vancomycin is active against Gram positive organisms, including MRSA
- Monitor serum creatinine and urea regularly as Vancomycin is renally excreted
- Loading doses of Vancomycin* enable therapeutic levels to be achieved rapidly but trough levels of Vancomycin need to be measured to ensure accumulation and toxicity do not occur
- Monitor FBC regularly as neutropenia and thrombocytopenia can occur after prolonged therapy
- (Oral Vancomycin is not absorbed and should only be used to treat *C. difficile* disease)

Dosing

1. Obtain patient's current weight
2. Determine and administer loading dose as per table below
3. Calculate patient's creatinine clearance using Cockcroft-Gault equation (see **Formulae**).
4. Select and prescribe dose according to algorithm

Loading Dose

Give loading dose based on Actual Body Weight - even if obese - regardless of renal function.

Actual weight (kg)	Dose (mg)	Infusion volume NaCl 0.9% or Glucose 5%	Infusion duration
<40	750	250ml	90 mins
40-59	1000	250ml	120 mins
60-90	1500	500ml	180 mins
>90	2000	500ml	240 mins

Maintenance dose table

Calculate Creatinine Clearance (CrCl) using Ideal Body Weight Creatinine Clearance

Calc CrCl (ml/min)	Maintenance dose and frequency	Volume of Infusion (ml)	Duration of infusion (mins)	Time to check levels	Give dose without waiting for level?
>110	1.5g 12hourly	500	150	Pre 4th dose	Yes
90-110	1.25g 12hourly	250	150	Pre 4th	Yes

				dose	
75-89	1g 12hourly	250	120	Pre 4th dose	Yes
55-74	750mg 12hourly	250	90	Pre 4th dose	Yes
40-54	500mg 12hourly	100	60	Pre 4th dose	Yes
30-39	750mg 24hourly	250	90	Pre 3rd dose	No - await level
20-29	500mg 24hourly	100	60	Pre 3rd dose	No - await level
<20	500mg every 48 hours	100	60	Pre 2nd dose	No - await level

Monitoring

Monitor trough (pre-dose) level

- Complete appropriate blood form with details of antibiotic, dose given, time of dose and time level is taken
- Monitor vancomycin level according to the table above
- **Do not routinely withhold dose while awaiting levels on BD regimen, unless concern**
- Monitor U&E to check renal function every 1 - 2 days
- If creatinine is stable and vancomycin level satisfactorily in range continue to re-check pre-dose level two or three times a week (e.g. Mon, Weds, Fri or Mon & Thurs or Tues & Fri)
- If the dose is changed read off the table for next level due after nth dose at new dosage to reach steady state
- Review need for IV Vancomycin treatment on a daily basis

Trough level interpretation and maintenance dose adjustment

Pre-dose (trough) level	**Maintenance dose adjustment** **Where total daily dose ≥ 1g, give as 2 divided doses**
Less than 5mg/L	Confirm all doses given. If they have, increase dose by 0.5g (maximum total daily dose 1.5g BD and never more than 1.5g in a single dose).
5-10mg/L	Confirm all doses given. If they have, increase dose by 0.25g (maximum total daily dose 1.5g BD and never more than 1.5g in a single dose).
10-15mg/L	Continue at current dose For S.aureus pneumonia, osteomyelitis, endocarditis and bacteraemia and meningitis – discuss with microbiology consultant/ antibiotic pharmacist.
15-20mg/L	Continue at current dose
20-25mg/L	Check level taken at correct time and not through infusion line. Decrease dose by 0.25g without omitting any doses or increase dosing

	interval.
More than 25mg/L	Withhold Vancomycin. Repeat levels daily and seek advice from microbiology consultant/antibiotic pharmacist Check level taken at correct time and not through infusion line.

Administration

Vancomycin should always be administered peripherally or centrally as a slow intravenous infusion in either Sodium Chloride 0.9% or Glucose 5% solution.

Give at a rate not exceeding 10 mg/minute. Rapid administration must be avoided as this results in flushing and a transient rash over neck and shoulder (red man syndrome).

Use the tables above

Contact a pharmacist for advice if limited fluid restriction is an issue

There is a separate protocol for vancomycin by continuous infusion which is used on ICU only.