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Standards of perinatal care for multiple pregnancies

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Abstract

Aims – To audit the Labour and Delivery set of standards published by the Regional Maternity Survey Office (RMSO), North East of England, in their document Standards of Care for Multiple Pregnancies (July 2009)

Methods – A retrospective audit involving all 28 multiple pregnancies between June 2009 and June 2010 was conducted at the Obstetrics Department of the Cumberland Infirmary, Carlisle. A proforma was devised to collect the data.

Results - Ten monochronic diamniotic twins and 18 dichorionic diamniotic twins were born during the audited period. Overall, personalised care was provided to parents in all 28 cases, although a pre-delivery meeting with the parents could not always take place because of premature deliveries. The chorionicity of the twins was not always determined postnatally and recommended drugs for 3rd stage of labour were not used.

Conclusions – The high rates of premature labour and delivery in mothers who carry twins mean that some guideline recommendations are hard to comply with.

Recommendations – Systematically analyse placentas by histology and report to RMSO the findings regarding timing of pre-delivery meetings with parents and medication used during 3rd stage of labour.

Introduction

The incidence of twin pregnancy has increased worldwide over the past 10 years. The main contributing factors are increased use of assisted reproductive techniques and delay of pregnancy by women.^{1,2,3} Increase in the frequency of multiple gestations is a concern because of the association with a diversity of unfavourable pregnancy outcomes. Complication rates in gestations show a positive correlation with the number of foetuses present. The reported incidence of perinatal morbidity in twin gestations is two to three times higher than in singleton pregnancies.^{4,5}

Appropriate conduct of a twin delivery via the vaginal route still constitutes one of the major challenges in routine obstetric practice. Studies show that the caesarean section rate is higher for twins, particularly the second twin, compared to singleton controls.⁶ Emergency caesarean sections are associated with increased risk of morbidity for both mother and baby. This audit aims to assess the quality of perinatal care in our obstetrics department and to identify areas that would benefit from improvement.

Standards Set for Audit

The Regional Maternity Survey Office (RMSO) North East of England is part of the North East Public Health Observatory (NEPHO). Their guidelines on Standards of Care for Multiple Pregnancies (published July 2009) were used to classify the standard of audit.⁷ The focus is on section 3, Labour and Delivery, which sets 11 different standards.

Method: Data Collection and Analysis

The period covered in this retrospective case note audit is June 2009 – June 2010. The patients were identified by Dr Fouzia Memon through the computerised patient admission system, clinical coding of surgical cases and special care baby unit

database. All the case notes were identified and consulted. Demographic information about patients was collected in addition to information about perinatal events. The information was recorded on a pro-forma and analysed by Leon Jonker.

Results

Table 1 shows the number of patients identified and the demographics of this sample. The patients were all Caucasian and all births took place the Cumberland Infirmary, Carlisle.

Table 1. Demographic characteristics of the patients.

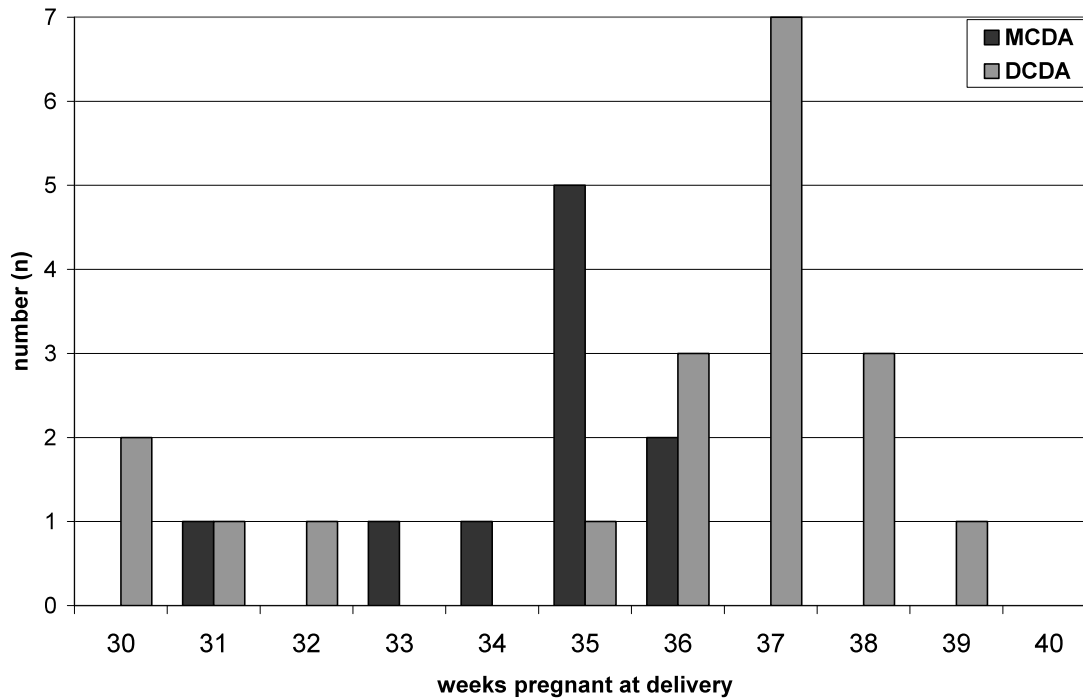
Characteristics	Number (n)	Percentage (%)
Number of women	28	100%
Maternal age (y)		
<30	11	39%
30-39	15	54%
>39	2	7%
Parity		
Primigravidae	16	57%
1	9	32%
2 or more	3	11%
Previous Births (if applicable)		
Normal vaginal delivery	10	84%
Assisted vaginal delivery	1	8%
Caesarean section	1	8%
BMI (Body Mass Index)		
< 21	3	11%
21-25	11	39%
26-30	9	32%
> 30	5	18%
Conception		
Spontaneous	22	79%
In-Vitro Fertilisation	6	21%
Chorionicity		
DCDA*	18	64%
MCDA**	10	36%

Notes: Dichorionic Diamniotic*; Monochorionic Diamniotic**

Table 2. Adherence to standards in NEPHO/RMSO guideline.

Standard	Adherence, n (%) [Target = 100%]	Notes
23. Delivery plan should be documented by 32-34 weeks	24/28 (86%)	Four women had already delivered by week 32.
24. Vaginal delivery should be performed in appropriate setting	28/28 (100%)	
25. In uncomplicated pregnancies, elective delivery to be offered between 36-37 wks (MCDA) and 37-38 wks (DCDA)	13/17 (76%)	Other pregnancies (11) were complicated with c-section indicated
26. Duty consultant informed about onset of labour	28/28 (100%)	
27. Dedicated one-to-one care form midwife	28/28 (100%)	
28. Two midwives present at delivery	28/28 (100%)	
29. Duty obstetrician immediately available on labour ward	28/28 (100%)	
30. Duty anaesthetist and paediatrician informed as appropriate	28/28 (100%)	
31. Syntometrine used as drug of choice for 3 rd stage unless contraindicated	0/28 (0%)	Syntocinon used when indicated rather than syntometrine in 5/28 (18%)
32. Elective course of steroids for women at high risk of preterm delivery	12/28 (43%)	All 12 were at risk of preterm labour
33. Placenta examined at delivery; placental histology to determine chorionicity	6/16 (38%)	Remaining 6 pregnancies involved mixed sex twins

In the period covered by this audit, 61% of the twins delivered less than 37 weeks of gestation, with 18% being under 34 weeks. Caesarean section was the main mode of delivery in both groups, making up 78% of all deliveries. Figure 1 further illustrates the high premature birth rate. In the MCDA group, only one set of twins (10%) was delivered vaginally in weeks 36-37. The percentage of twins delivered vaginally in weeks 37-38 for the DCDA group was 30% (3 out of 10 births occurred vaginally). The parity has effect on gestation at delivery and mode of delivery. Eighty-three percent (10/12) of multiparous women delivered less than 36 weeks of gestation while 44% (7/16) of primiparous had delivery under 36 weeks of gestation.

Figure 1. Overview of gestational age at which twins were born

Chorionicity does not seem to affect mode of delivery as 75% of twins from both DCDA and MCDA twins delivered by caesarean section. Forty percent of monochorionic twins required emergency Caesarean section and 30% had elective Caesarean section whereas 45% of dichorionic twins had to be delivered by emergency Caesarean section and 33% had elective Caesarean section.

Half of the total sample of twins was transferred to the special care baby unit. In the MCDA group the figure was 80% (8/10) and it was 33% (6/18) for DCDA twins. Chorionicity does affect special baby care unit admission as from MCDA group 80% of twins went to SCBU. For the majority of twins their stay was uneventful with full recovery and only 5 sets needed continuous positive airway pressure; those twins who required continuous positive airway pressure made a full recovery and were discharged home. Only one twin needed tertiary care unit transfer because of antenatal confirmed congenital anomaly on scan. No perinatal mortality occurred during the course of the audited period.

Discussion

The outcomes of this audit add to the existing evidence that the incidence of preterm delivery is higher in twin pregnancy, affecting as many as 40% to 50% of such gestations.⁸ The data regarding gestation on delivery highlights issues with two of the standards set out in the NEPHO/RMSO guidelines, namely:

- 1 When a meeting with the parents(to be) should take place to discuss plans for delivery, and
- 2 How likely it will be that elective delivery can take place at 36-37 weeks (MCDA) or 37-38 weeks (DCDA).

Point 2 cannot be influenced whereas point 1 can be changed. In this audit, 4 out of 28 parents did not have a meeting with the obstetrics team to discuss plans for delivery, to include mode and timing of delivery and any other potential wishes the parents may have. It may be worth considering bringing these meetings forward to take place between 30-31 weeks if clinically possible.

Despite NEPHO/RMSO guidelines indicating Syntrometrine as drug of choice for 3rd stage of labour, our department uses Syntocinon. In their guidelines on intrapartum care, NICE names only Syntocinon for use in 3rd stage even though in 2007 it was not licensed for this indication.⁹ Syntocinon does not have the issues with raised diastolic blood pressure which Syntrometrine has.¹⁰ In general, the NEPHO/RMSO standards of care are adhered to very well, although placentas should be examined histologically on a more consistent basis.

Recommendations

At local level

- Increase practice of analysing placentas for chorionicity and re-audit.

At regional level

- Discuss with NEPHO/RMSO whether deciding on delivery plan with patients at 32-34 weeks is too late into the pregnancy because of risk that delivery may already have taken place.
- Consider making Syntocinon drug of choice for 3rd stage, or adding it to list of recommended drugs.

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