The use of antenatal steroids in elective caesarean sections undertaken before 39 weeks gestation at the Royal Alexandra Hospital, Paisley

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Introduction

The percentage of women delivering by caesarean section has steadily been rising in the UK. The latest NHS maternity statistics in 2010 from England showed that 24.8% of women delivered by caesarean sections, with just under half of these being electively performed[1]. While elective caesarean sections have become more common due to the relative safety of the procedure for the mother, the neonatal risks associated with performing it before the expected delivery date (EDD) continue to be debated.

Current Green-top guidelines published by the Royal College of Obstetricians and Gynaecologists (RCOG) in 2010 offer recommendations on the use of antenatal corticosteroids in women undergoing elective caesarean sections. The two main recommendations are that firstly elective caesarean sections should ideally not be performed before 39^{+0} weeks gestation and secondly corticosteroids should be given for all elective caesarean sections before 38^{+6} weeks gestation[2].

The RCOG also advise that while there are no contraindications for antenatal corticosteroid use, its use is cautioned for mothers who suffer from any systemic infections. Moreover, they advise that delaying the caesarean section until 39^{+0} weeks is more advisable than giving antenatal corticosteroids to reduce the likelihood of neonatal respiratory morbidity.

Aim

The aim of this audit was to identify how many elective caesarean sections are being performed before 39^{+0} weeks gestation and if antenatal corticosteroids are being prescribed for women undergoing caesarean section before 38^{+6} weeks gestation at the Royal Alexandra Hospital, Paisley.

Method

The audit was conducted over a three month period, from July to September 2011. All elective caesarean sections performed over this period were identified from the theatre diary.

Information was collected daily from the theatre diary and from the maternity case notes. The information collected included; Gestational age, parity, indications for caesarean section, previous caesarean section, antenatal corticosteroids given, if no corticosteroids were prescribed, were there any documented contraindications

The data was then recorded onto a Microsoft Excel Worksheet. Any elective caesarean sections performed at or after 39^{+0} weeks were excluded from data analysis.

Results

Between the period of July to September, 96 elective caesarean sections were performed, with the gestational age ranging from 36^{+0} to 40^{+4} weeks.

Of the 96 elective sections over this period, 50 (52%) of these were performed before 39^{+0} weeks gestation. Of the 46 women whose gestational age was less than 38^{+6} weeks, only 8 (17%) were given antenatal corticosteroids. Table 1 provides a breakdown of the number of caesarean sections before 39^{+0} gestation and it can be seen that the majority of women not receiving steroids were those between 38^{+0} to 38^{+5} weeks.

Table 1- Breakdown of caesarean sections before 39^{+0} weeks gestation

Gestation	Number of elective caesarean sections performed	Number of women receiving corticosteroids
36^{+0}- 36^{+6} weeks	3	3
37^{+0}- 37^{+6} weeks	5	4
38^{+0}- 38^{+5} weeks	38	1
38^{+6} weeks	4	0

Of the remaining 38 women who did not receive any corticosteroids, there were no documented contraindications.

Overall, the main documented indication for elective caesarean sections was previous caesarean section, with 59 from the 96 women (61%) having had a previous section. For the 8 women who did receive steroids, there were additional reasons indicated for their caesarean sections, these included; Intrauterine growth retardation (IUGR), hypertension, gestational diabetes, unicornuate uterus and ovarian cyst.

Discussion

The main findings of this audit were that just over half of all the caesarean sections being performed were before the current RCOG recommendation of 39^{+0} weeks. Secondly, antenatal corticosteroids were not being routinely prescribed for the sections being performed before 38^{+6} weeks.

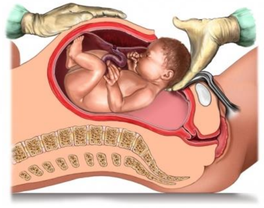
There could be a number of reasons why these recommendations are not being routinely followed. Firstly, caesarean sections may be booked in earlier than the recommended gestational age, as there are a limited number of caesarean sections that can be performed each week. At the Royal Alexandra Hospital, there was a maximum number of fifteen allocated slots per week for elective sections.

Secondly, current guidelines recommend the use of antenatal corticosteroids up to 36^{+5} weeks, as thereafter women are considered to be "term" and its efficacy in promoting fetal lung development is considerably less. This could explain why the majority of woman not receiving corticosteroids are in the 38 week category.

Finally, there may also be an overall lack of awareness on the latest RCOG guidelines which do advocate delaying elective caesarean section until 39^{+0} weeks rather than prescribing antenatal steroids to reduce neonatal respiratory morbidity.

The main limitation of this audit was that it was carried out in a single maternity unit and so there was a relatively small sample size. We also did not follow up the babies delivered by elective caesarean section and it would be interesting to identify how many required admission to the special care baby unit due to respiratory problems. This is especially important, as implementing antenatal corticosteroids for elective sections prior to 38^{+6} weeks will be expensive and looking at how cost effective it is will be vital for securing its funding.

The findings of this audit were presented at the weekly Consultant meeting. The plan is to implement a checklist that would be completed by the Consultant Obstetrician or Registrar when booking in patients for their elective caesarean sections. The aim is that this will help to initiate either the delay to 39 weeks for the caesarean section or the prescription of antenatal steroids if it is felt that it is in the best interest to perform the caesarean section earlier.



[1] V Zanardo, AK Simbi, M Franzoi, G Soldá, A Salvadori, D Trevisanuto Neonatal respiratory morbidity risk and mode of delivery at term: influence of timing of elective caesarean delivery. Acta Paediatrica 2004Volume 93, Issue 5, pages 643–647, May 2004

[2] Royal College of Obstetricians and Gynaecologists. Green-top 7: Antenatal Corticosteroids to Reduce Neonatal Morbidity. October 2010