High risk pregnancy and women with complex health

For this assignment I have been asked to look at the care I have seen and been involved in giving to a woman with a high risk pregnancy. I intend to identify how my practice could be developed to meet the similar needs of women in the future. To do this I am going to use a reflective approach. I am going to look at the normal anatomy and physiology and analyse the patho-physiology in relation to high risk pregnancy and birth.

For most women, their midwife is their first point of contact so they have a crucial role to play in identifying any risks. Included in their extensive role is facilitating pregnancy and childbirth as a positive and fulfilling experience. This is most fundamental for those women whose childbearing experience has been categorised as high risk (Page, 2006).

A pregnancy is classed as high risk if there are any factors that may adversely affect the fetal or maternal outcome. Risk factors must be identified as early as possible to increase the chances of an improved outcome (Queenan et al, 2007).

When a woman is booked for her maternity care, her medical and obstetric history is taken to ascertain whether she would be suitable for midwifery led care (low risk) or consultant or obstetric led care (high risk). A woman can change from either group during her pregnancy. For example, she may start her care as low risk but then something may happen or a condition may develop so she may therefore require consultant input into her care.

Factors which could mean a woman has a high risk pregnancy include epilepsy, diabetes, cardiac problems, multiple pregnancy, hypertension, obesity and previous obstetric complications, i. e. caesarean section,

previous haemorrhage (whether that be antepartum, intrapartum or postpartum), recurrent miscarriages or previous intra-uterine death.

Using Gibbs' (1988) reflective cycle, I am going to discuss a woman I recently cared for whilst working on Central Delivery Suite, whose pregnancy had been assessed as high risk. This was due to her having had a previous emergency caesarean section and a previous ventouse delivery.

In accordance with The Code (NMC, 2008) I have changed all names mentioned to respect their confidentiality.

Description:

Laura, aged 39 years old, was 39+1 weeks pregnant, gravida three, para two. As just mentioned, her obstetric history meant she would see an obstetric consultant during her pregnancy. As Laura was planning on having a vaginal birth after caesarean section (VBAC) this increased her risk. It was also apparent she had tested positive for Group B Streptococcus (GBS) in both her previous pregnancies. Laura had gone into spontaneous labour. Laura and her partner had both requested antibiotics to be started as soon as possible due to the previous GBS. This was not something my mentor could agree to as Laura had not tested positive for it at any point during this pregnancy.

However, due to Laura's admission temperature reading being 38. 1°C and in view of the previous two pregnancies testing positive for GBS, it was decided by the obstetric consultant on duty that she would receive antibiotics during labour. We confirmed she was in established labour by

performing a vaginal examination, with consent, and finding the cervix was 4-5 cms dilated, partially effaced and membranes were felt intact. After Laura was cannulated, the antibiotic Benzylpenicillin (Penicillin G) 3g was administered intravenously. Then at four-hourly intervals she was given 1. 5g until delivery. Due to Laura’s high risk status a cardiotocograph (CTG) was commenced to keep a trace on the fetal heart rate and the uterine contractions.

Laura laboured for approximately 6 hours in total, and went on to have a normal vaginal delivery of a healthy baby boy.

Postnatally, Laura’s observations were taken and baby observations were also taken six hourly and observed for a minimum of twelve hours in accordance with Local Trust Guidelines (Local Trust, 2005).

Feelings:

This event particularly sticks in my mind due to my own curiosity about Group B Streptococcus. When Laura was showing a temperature of 38. 1°C, I recognised this was out of the normal range so I informed my mentor. I knew a high temperature could indicate a sign of infection so it was important I made my mentor aware. I felt calm at the time and knew my mentor and the obstetric consultant had the matter under control. My mentor made me feel included in the situation and explained fully what she was doing and when. She went through the process of preparing the drugs and the IV line with me.

I was very happy with the outcome of the situation. At the end of the day, we all wanted a normal, natural delivery of a healthy baby and that was achieved.

Evaluation:

The ultimate goal of this situation was a healthy mother and baby, which was successfully achieved. I am glad the consultant made the decision that Laura would be started on antibiotics as I was aware of how anxious she was.

Analysis:

The final outcome was Laura had a healthy baby with no signs of GBS disease.

Contributing factors to this were how I relayed important information to my mentor and how the obstetric consultant made the right choice offering Laura antibiotics, even though she had not tested positive for GBS in this pregnancy.

I believe Laura should have been offered a test for GBS to confirm if it was present in this pregnancy or not. She was very anxious about the situation so I feel this would have at least helped put her mind at rest knowing either way. Her and her partner had come to CDS demanding antibiotics as a precaution anyway, and luckily for her, her high temperature meant she received them. Had she not had the high temperature that decision would have been down to the consultant.

Conclusion:

I learnt from this experience the correct drugs to be given in labour, and the quantities and times stages they should be given. I also learnt the drug to be given if the woman is allergic to the primary choice drug. Plus, from using this topic as my high risk assignment, the further reading I have undertaken has also taught me a lot.

Action Plan:

If the situation happened again, I would feel more confident in my knowledge of explaining to the woman and her family why we would advise her to have the antibiotics. In this particular situation, Laura knew a lot about GBS due to her previous pregnancies being tested for it and she was then subsequently treated during the labours. However, if a woman I was caring for had little knowledge of GBS, I feel I could explain it.

Laura was classified as high risk due to her previous obstetric history. However, I am going to concentrate on the Group B streptococcus (GBS) she was concerned she had, after having it in both previous pregnancies. I also have a personal interest around GBS as this was something I tested positive for during my pregnancy and I did not really understand what it was or the complications of it. I was screened routinely as I was living in Spain at the time. Laura was only aware of her GBS, in her previous pregnancies, due to routine screening in Germany. She had not been screened here in the UK for GBS in this pregnancy, due to the uncertainty of clinical evidence and cost effectiveness of the routine screening (NICE, 2003). As mentioned in my reflection, this was something Laura was concerned about and requested she receive antibiotics during her labour as a precaution.

Group B streptococcus is a common type of streptococcus bacterium. Approximately a third of men and women are ‘ carriers’ of GBS in their intestines and a quarter of women carry it in their vagina. Most people are unaware they are carriers as it can be difficult to detect and does not cause any symptoms. Carrying it is perfectly normal as it is one of many different bacteria’s that live within our bodies.

Problems can arise when GBS is transmitted to the fetus. This could happen if the membranes rupture, during labour or the delivery. The fetus could come into contact with GBS if the bacterium travels upwards from the woman’s vagina and into the uterus due to the membranes not being there to protect the fetus. If there are prolonged rupture of membranes there is increased risk of transmission due to more time for the micro-organisms to be transported from the vagina into the cervix, and then to the uterus. According to the Group B Strep Association there is also evidence that GBS may cross intact membranes to expose the fetus whilst it is still in the womb. This could therefore cause preterm births, stillbirths or miscarriages. The fetus could also be exposed while passing through the birth canal. A preterm infant would be more susceptible as their lesser-developed bodies and immune systems are more vulnerable to GBS infection than older infants. The fetus could become infected if they swallow or inhale the bacteria (GBSA, 2011). If the fetus acquires GBS in utero this is known as early onset (Chapman, 2003).

GBS can also be found on the hands and in the respiratory tract of a colonised person. So once a baby is born, GBS could be passed on to it from the hands. This is why, especially within the first 3 months of a baby’s life, it

is so important for anyone who comes into contact with a baby, washes and dries their hands thoroughly. If the baby was to develop the disease from repeated exposure, this is called late onset (Chapman, 2003).

In Laura’s case, we were concerned about in utero transmission which could cause early onset GBS disease. This gave us the option for the administration of prophylactic antibiotics during labour, and at least two hours before delivery, which has been shown to reduce the frequency of neonatal GBS infection (Local Trust Guideline, 2009). Antibiotics given during labour can be very effective at preventing this transmission.

A guideline written by The Royal College of Obstetricians and Gynaecologists (RCOG, 2003) state a woman should be offered intrapartum antibiotic prophylaxis if they have the following risk factors:

â- previous baby affected by GBS

â- GBS bacteriuria detected during the current pregnancy

â- preterm labour (less than 37 completed weeks of pregnancy)

â- prolonged rupture of the membranes (more than 18 hours before delivery)

â- fever in labour (a temperature of more than 37. 8°C)

Although Laura only had one of the above risk factors, she was offered the antibiotics at the discretion of the consultant.

Women must also be reminded of the risks with taking antibiotics and be given all the information so they can make an informed choice. The antibiotics a woman receives will also depend if she has any allergies to medication. The recommended antibiotic for those allergic to penicillin is clindamycin, 900mg administered intravenously, from onset of labour and every 8 hours until delivery (GBSS, 2007, & Local Trust Guideline, 2005).

During my placement on the Neonatal Unit, I also cared for a baby that had to be admitted for antibiotics as its mother had tested positive for GBS during her pregnancy. She was unable to receive antibiotics as the the delivery was so fast and there was not enough time. Therefore the baby was admitted to the Neonatal Unit so he could receive antibiotics. Blood cultures from the baby were obtained and he was treated with penicillin until the culture results were available. This enhanced the importance of the woman receiving the prophylactic antibiotics during labour.

In any high risk situation it is vital that maternal and fetal well being is monitored.

As Laura was high risk she was placed on continuous cardiotocograph (CTG) monitoring.

This gave us a recording and trace of the fetal heart rate so we could indentify any deviation from the norm, in comparison with the baseline for that baby. The primary aim of the CTG is to identify a fetus that may be hypoxic so additional assessments of fetal well-being can be used (i. e. fetal blood sampling) or the fetus being delivered by an instrumental vaginal birth

or caesarean section. The use of this kind of technology is justified in being able to save the life a fetus that is shown to be in distress.

The CTG detects the fetal heart rate (FHR) and the uterine activity (toco) simultaneously and displays it in the form of graph. It is important to check the maternal pulse at the same time as applying the CTG, to ensure the machine is recording the fetal heart rate, and not the mothers. The modern machines we use at my Trust have a maternal pulse sensor which the mother applies to her finger, which then records the maternal pulse rate on the graph that is printed out.

The continuous electronic monitoring using the CTG is vital to get a contemporaneous recording of the fetal heart rate. It will give us the baseline heart rate (usually between 110-160 beats per minute), accelerations (momentary increases in the fetal heart rate) and decelerations (momentary decreases in the fetal heart rate). Some aspects of labour will cause natural alterations in the FHR patterns. For example, the pattern will be different when the fetus is asleep or awake. External factors, like uterine contractions and maternal movement can cause the FHR to change. The FHR can also be affected by opiate based painkillers, like pethidine. Some of these changes are quite subtle and can only be detected by continuous CTG e. g. baseline variability, temporal shape of decelerations.

To be a competent midwife, it is imperative I have knowledge on how to interpret the recorded traces of a CTG. I have seen many CTG traces whilst on my hospital placement due to the high number of high risk women my Trust cares for. However, I still feel I am learning new things every time I see

one, as everyone is different. I can distinguish between baseline tachycardia (where the fetal heart rate baseline rises above 160 beats per minute) and baseline bradycardia (the opposite, where the fetal heart rate baseline goes below 110 beats per minute) (Mukherjee, 2007).

Baseline tachycardia could be physiological if the trace is from a preterm fetus due to immaturity or secondary to maternal pyrexia or dehydration. It could also be a sign of fetal hypoxia. The fetus would try to increase the cardiac output mainly by increasing the heart rate to supply vital organs with oxygen and nutrients.

Baseline bradycardia could be physiological if the trace is from a post-term fetus or possibly a large fetus, provided there are also accelerations present and there baseline variability is above the normal range (> 5 beats per minute). If it is just baseline bradycardia with no other normal or reassuring factors, this would need immediate action.

Another form of technology used within Laura’s pregnancy was screening. When she was initially booked for her antenatal care, her blood and urine would have be sent for screening, after she consented to this. She would also have attended ultrasound scans which are also a form of screening. This is something that is offered to all pregnant women and regardless of their risk status, it is used in both low and high risk pregnancies. It is a process which has been developed, which was not done previously due to lack of knowledge and technology. The standard screening during the antenatal period is urine; to check for any sign of infection, and blood; to check the

woman’s blood group, her rhesus status, her iron levels, if she is immune to rubella, and to check for hepatitis B, syphilis and HIV (NHS Choices, 2011).

In line with the National Institute for Clinical Excellence (2003) pregnant women should be offered evidence based information and support to enable them to make informed decisions regarding their care. This means women should be informed of all screening tests available to them. I believe this should include information about screening which is not necessarily available within the NHS but could be carried out privately, for example, GBS screening.

There are arguments for and against introducing routine screening for GBS in the UK. Plumb, Holwell and Clayton (2007) argue that in the UK, GBS prevention is inadequate. They believe the NHS should offer testing for GBS in late pregnancy, thus giving women the opportunity to establish whether their baby is at higher risk of developing the GBS infection.

My current Trust guideline (2005) state there is not enough evidence for it at this time.

GBS awareness campaigners, Group B Strep Support, are pushing for routine testing to be introduced in the UK (Prince, 2011). According to GBSS, Western countries that routinely test, have a lower incidence of infection in new born babies, where as cases in the UK are on the rise. Even since the introduction of the Royal College of Obstetrics and Gynaecologist’s guideline for preventing GBS infection in newborns, in 2003, there has not been a decrease in either the number or the incidence of GBS infections in babies (GBSS, 2007).

The table below shows the how the GBS infection in babies has increased throughout England, Wales and Northern Ireland.

Year report published

Number

All cases

(babies 0-90 days old

Incidence per 1000 live births

Number

Early onset (babies 0-6 days old) Incidence per 1000 live births

Number

Late onset (babies 7-90 days old) Incidence per 1000 live births

Number

2003/3004

311

0. 48

207

0. 32

104

0. 16

0. 48

2006/2007

409

0. 61

248

0. 37

161

0. 24

0. 61

2007/2008

421

0. 61

258

0. 37

163

0. 24

0. 61

2008/2009

470

0. 66

279

0. 39

191

0. 27

0. 66

(data published by the Health Protection Agency taken from www. gbss. org. uk/filepool/GBS_Infections_on_the_Increase. doc)

Table 1 Number and rate (per 1000 live births) of group B streptococcal bacteraemia reports in infant's 0â€ 90 days old in England, Wales and Northern Ireland: 2003-2009.

The overall number of GBS infections within adults is also reported to have increased by more than 72% from 2001 to 2008:

(data published by the Health Protection Agency

taken from www. gbss. org. uk/filepool/GBS_Infections_on_the_Increase. doc)

Table 2 Number of GBS infections in both males and females

within England, Wales and Northern Ireland: 2001-2008.

A better indication of the rise in GBS infections would be taken from women only, who are 35-37 weeks pregnant. I believe this would give more of an insight into pregnancy GBS infection rates.

While the evidence states the increase in rates, I could not find any reasons for the increases. Some factors I believe may contribute to the rise include the lack of personal hygiene, modern living or even due to lifestyle. For example, many years ago clothing and underwear used to be boiled when washing but now people may be washing their clothes on a 40°C wash and this may not be enough to kill all the bacteria.

It may not be due to any of these factors; it may just be we have a better awareness of GBS now then what we did years ago. With the constant improvement of technology, we will also be finding out new things.

Although the internet is not a form of technology we use within midwifery, it is certainly a form of technology we definitely need to be aware of. Within the last ten years or so, the internet has become increasingly popular. This means the general public can find about anything, more importantly medical information they may not have been able to access before. Therefore, we need to be aware of those women that we care for, that may have either some basic knowledge or an in-depth knowledge of a medical issue, for instance GBS. The NHS even has a website called NHS Choices (www. nhs. uk) which people can access to check symptoms and research illnesses and also pregnancy. I think this is mainly a good thing, although women may read so much into something they find online and it may make them more

anxious or worried. It should not replace the direct contact with their midwife.

The Nursing and Midwifery Council (NMC, 2008), state we should be delivering care based on the best available evidence. By reading the research I have found to write this assignment I am adhering to The Code by giving women evidence based advice. I may not be able to radically change my operational practice but I will definitely be more aware of what to look for and how to manage the situation. I will also ensure I am aware of those women who may have a more in-depth knowledge about GBS and understand their anxieties.

From writing this assignment I have identified the risks of GBS, who the risks affect and to what degree it could affect them. I feel I would be able to recognise the signs and be aware of the treatment and management. I have acknowledged the main technology used is for the screening of GBS within the laboratory investigation systems and believe this should be carried out routinely within the UK.

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