CRITICAL CARE

COMMENTARY

Critical care in pregnancy

Felicity Plaat* and Monica Naik

See related review by Neligan and Laffey, http://ccforum.com/content/15/4/227

Abstract

Childbirth is a major event in the lives of mothers and their families. Critical illness in pregnancy is uncommon but may arise from conditions unique to pregnancy, conditions exacerbated by pregnancy and coincidental conditions. According to the latest Confidential Enquiry into Maternal Deaths in the UK, haemorrhage remains a leading direct cause of mortality; however, there has been an increase in mortality due to indirect causes. The obstetric population has changed over the past decade and we are caring for much older mothers with pre-existing disorders and advanced chronic medical conditions. It is therefore essential to adopt an early multidisciplinary approach for the care of these women. With birth rates increasing, complex caseloads and changes in training of both medical and midwifery staff, the challenge of caring for critically ill obstetric patients requires urgent attention.

Childbirth is a major event for women and their families [1]. Although for almost 20 years there has been an emphasis on the naturalness of the process [2], women in the UK continue to die in childbirth. For every death, there are nine women who develop severe maternal morbidity. Critical illness in the obstetric patient may be due to conditions unique to pregnancy, conditions exacerbated by pregnancy and coincidental conditions. The accompanying article concentrates on conditions unique to pregnancy [1].

A recent study of adult intensive therapy unit admissions in the UK indicated that the majority of obstetric admissions were postpartum and due to obstetric haemorrhage [1]. Other conditions referred to in the article include hypertensive disorders of pregnancy, including those involving the liver and amniotic fluid embolism. Such conditions are responsible for what are termed direct deaths in the Confidential Enquiry into Maternal Deaths in the UK. In the most recent report, covering the triennium 2006 to 2008, for the first time the number of deaths due to direct causes has declined – notably those due to haemorrhage [3]. This is encouraging and probably reflects better early multidisciplinary management as described in the article.

Although some women with severe hypertensive disorders of pregnancy will require admission to adult critical care units, the majority receive care within the maternity unit. A recent report from the Joint Standing Committee of the Royal College of Anaesthetists and the Royal College of Obstetricians & Gynaecologists emphasises the need for the same standards of critical care for the obstetric patient, wherever it is delivered [4].

If mortality is the tip of the iceberg, the intensivist should be aware that deaths due to conditions exacerbated by pregnancy (indirect causes) are on the increase. The authors discuss sepsis, now the leading direct cause of maternal death [1]. A local review of obstetric ICU admissions identified an increasing number due to sepsis presenting at all stages of pregnancy but most commonly postpartum. The cases included H_1N_1 influenza, wound infections and biliary sepsis. It also important to note that sepsis in the mother may be associated with neonatal sepsis.

Other indirect causes are on the increase. The reason for this is that the obstetric population has changed over the decades. The obstetric population is much older, with co-morbidities including essential hypertension, type 2 diabetes and even coronary heart disease. Obesity is a major concern and in pregnancy provides numerous challenges. Indeed, the Royal College of Anaesthetists and the Royal College of Obstetricians & Gynaecologists have recently produced guidelines on management in pregnancy [5,6]. We are encountering women with chronic medical conditions that previously precluded them from pregnancy. Improved medical care and assisted reproductive techniques now enable them to become pregnant. Women from socially deprived areas and recent immigrants may present late with advanced medical problems. All of these factors add up to a more complex, high-risk caseload with an increasing need for

*Correspondence: felicity.plaat@imperial.nhs.uk
Queen Charlotte's Hospital, Imperial College NHS Trust, Du Cane Road, London W12 0HS, UK

specialist input by obstetric physicians [7], intensive care and above all early multidisciplinary teamwork.

Although the majority of obstetric admissions to the intensive therapy unit are postnatal, antenatal cases (the majority of whom are not suffering from conditions directly related to pregnancy) present particular challenges. As the authors point out, physiological parameters are changed by pregnancy. For the sake of both mother and foetus, such changes must not be ignored. The importance of minimising aortocaval compression cannot be overemphasised. Once a pregnant mother is admitted to intensive care, it is vital to involve midwifery and obstetric teams early. The increased risk of hypoxia and potential for difficult intubation and aspiration should be borne in mind.

With birth rates increasing, complex caseloads and changes in training for both medical and midwifery staff, the challenge of caring for critically ill obstetric patients will become greater. Unfortunately one of the findings of the latest Confidential Enquiry into Maternal Deaths report was an unacceptable level of suboptimal care. One of the steps to addressing this is the proposed Back to Basics project involving packages of education and training emphasising the fundamentals of history and examination, recognition and initial management of the unwell individual and the use of early warning systems such as early warning score charts modified for pregnancy [3]. Simulation, skills and drills training, and reinforcement of medical guidelines have been shown to improve aspects of crisis resource management such as communication, teamwork and leadership. Sharing medical and nursing expertise with experience from other high-dependency and intensive care areas is essential to optimise the care of the critically ill pregnant patient.

Competing interests
The authors declare that they have no competing interests.

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