

Medical deaths in pregnancy

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Saving mothers' lives, published in December 2007, is the seventh report of the Confidential Enquiries into Maternal Deaths in the UK and covers deaths between 2003 and 2005.¹ It should be read by all physicians caring for pregnant or potentially pregnant women including those with responsibility for acute medical admissions.

More pregnant women die in the UK from indirect causes, ie from pre-existing or new medical or mental health conditions aggravated by pregnancy, than from direct causes, ie from a haemorrhage that could only be due to the pregnancy. The most common cause of death in the UK in pregnancy or the puerperium is cardiac disease (48 deaths, commonly myocardial infarction or aortic dissection) followed by deaths from neurological conditions (37 deaths, commonly subarachnoid and intracerebral haemorrhage or epilepsy).

Epilepsy is dangerous because of the risk of sudden unexpected deaths in epilepsy (SUDEP). This risk may not necessarily be greater in pregnancy than in the non-pregnant state but for a variety of reasons epilepsy may be more difficult to control in pregnancy thus increasing the risk of SUDEP. Mothers who stop anti-epileptic drug therapy must be made aware of this risk.

Between 2003 and 2005, 135 pregnant women or women who had recently delivered died in the UK from cardiac disease or other indirect causes excluding malignancy and psychiatric deaths. In addition to these deaths, there are conditions leading to potential direct deaths where the input of physicians is appropriate. The most common direct cause of death is thromboembolism (41 deaths, mainly pulmonary embolism). Many other direct causes, such as genital tract sepsis and acute fatty liver of pregnancy, involve management in collaboration with physicians.

The maternal mortality rate is not decreasing in the UK. The reasons for this are complex but it is noteworthy that in the current triennium more than half the women who died from direct or indirect causes were obese. In addition, women are entering pregnancy later in life and the risks to older women during pregnancy are higher. For example, a woman aged over 40 is three times more likely to die in pregnancy as one aged between 20 and 24, and they are twice as likely to die than the average for all pregnant women. Black African women, including asylum seekers and newly arrived refugees, have a mortality

rate nearly six times higher than white women. These demographic factors combined with improved treatments for chronic medical conditions mean that a greater number of women now embark on motherhood with pre-existing complex medical problems or at higher risk of developing medical problems in pregnancy.

This is well illustrated by the deaths from cardiac disease which have seen a fourfold increase in the numbers of deaths from ischaemic heart disease between 2000–2 and between 2003–5. All women who died from ischaemic heart disease had identifiable risk factors including obesity, older age and high parity, smoking, diabetes, pre-existing hypertension, and family history. In some cases, however, symptoms were dismissed despite the presence of risk factors. Myocardial infarction and acute coronary syndrome can present with atypical features in pregnancy such as abdominal or epigastric pain and vomiting. Troponin levels are not affected by pregnancy and there should be a low threshold for angiography remembering that coronary artery dissection is associated with pregnancy.

The increasing number of immigrant women is also responsible for the reappearance after 10 years of rheumatic heart disease as a cause of maternal death. Between 2003 and 2005, there were two recorded deaths from rheumatic mitral stenosis. In one of these, delay in the diagnosis was partly due to the advice of a medical registrar to avoid performing a chest X-ray (CXR) in a woman who presented with cough, breathlessness, chest pain and tachycardia. All physicians should know that CXRs are safe in pregnancy and should never be withheld.

What lessons can be learnt from these tragic deaths?

- Women, especially teenage girls, with pre-existing, serious medical conditions should have pre-pregnancy counselling at every opportunity, even if they are not immediately seeking pregnancy. This is especially the case if they seek assisted reproduction.
- Effective pathways must be established so that physicians and obstetricians can communicate properly to treat pregnant women, both in acute illness and during regular antenatal care. The latter is best managed in a combined medical obstetric antenatal clinic.

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- Specialists in acute medical care need some knowledge of the way in which common medical conditions interact with pregnancy. A number of healthcare professionals failed to identify and manage common medical conditions or potential emergencies outside their immediate area of expertise.
- The on-call consultant obstetrician should be told about all sick pregnant women in hospital even if they have a medical problem and are admitted to a medical bed.
- The early detection of severe illness in mothers remains a challenge and the use of modified early warning scoring systems adapted for obstetric patients, one of the top 10 key recommendations of the report,¹ should help reduce the cases in which death has followed the late recognition of serious illness.
- Even those women with medically complex pregnancies who did receive care from a multidisciplinary team did not always have a clear management plan. The lack of a clearly documented plan, combined with poor communication, resulted in some cases in significant problems when women ran into difficulties and required emergency treatment.

Physicians have two important roles to play to reduce maternal mortality and morbidity. Firstly, they should ensure that all their potentially pregnant patients (all women between the ages of 15 and 45 years) with chronic medical diseases are

informed about the implications of a pregnancy for their health and for pregnancy outcome, about what modifications to drug therapy would be necessary, and of the safety of their therapy during pregnancy. Adequate verbal and written communication with the obstetric and midwifery teams concerning management in pregnancy is essential. Secondly, physicians should ensure they are equipped to adequately and appropriately manage acute medical conditions presenting in pregnancy and the puerperium, and be willing and able to assist in the management of critically ill obstetric patients.

References

- 1 Lewis G (ed). The Confidential Enquiry into Maternal and Child Health. *Saving mothers' lives: reviewing maternal deaths to make motherhood safer – 2003–2005. The 7th report of the Confidential Enquiries into Maternal Deaths in the UK*. London: CEMACH, 2007. www.cemach.org.uk/getdoc/d9924786-88aa-46bb-b829-738117508d98/Why-Mothers-Die-2000-2002.aspx
- 2 Confidential Enquiry into Maternal and Child Health. *Why mothers die. Sixth report on the Confidential Enquiries into Maternal Deaths in the United Kingdom 2000–02*. London: CEMACH, 2004