Pulmonary embolism and hypertension remain the leading causes of maternal mortality in the United Kingdom

De Swiet, Michael. Maternal mortality: Confidential Enquiries into maternal deaths in the United Kingdom. Am J Obstet Gynecol 2000;182:760-6.

Question: What are the leading causes of maternal mortality, and how many of these are the result of substandard care?

Design: The Confidential Enquiries into Maternal Deaths collects data on >99% of all maternal deaths in the United Kingdom and reports these every 3 years. Death certificates are linked to birth certificates via computer to facilitate capturing maternal deaths. Further details into the enquiry process are not provided. The results for the triennium 1994-1996 are provided and compared to previous years.

Outcome measures:

Deaths are defined as direct deaths (related to obstetric complications) or indirect deaths (caused by previous disease aggravated by pregnancy). Fortuitous deaths are those from unrelated causes.

Substandard care definitions included 1) failure to refer to consultants, 2) failure of consultants to attend or to assume responsibility, 3) no clear unit policy for sever preeclampsia and other conditions, 4) lack of teamwork and 5) failure of the lead professional to identify problems outside of his or her area of expertise.

Main results:

Maternal mortality has fallen from 70 per 100,000 in the 1950's to 11 per 100,000 in 1994-1996 in the United Kingdom. The main reduction has been in direct causes, particularly those related to abortion, following the liberalization of abortion laws in 1968.

Thromboembolism was the cause of death in 46 women (18 antenatal and 28 postpartum). In 16 cases there was either failure to use prophylactic anticoagulation in high risk situations or failure to diagnose in a timely fashion. Hypertensive deaths occurred in 20 women, secondary to respiratory failure in 10 and CNS causes in 7. Mortality from hypertension was related to maternal age, with 5 times as many women >40 yrs of age compared to women <25 yrs dying of hypertension. Substandard care occurred in 50% of cases primarily related to inappropriate fluid balance. There were 12 deaths from maternal hemorrhage in 1994-1996 compared to 220 between 1952-1954 and they were equally distributed between the antepartum and postpartum period.

Cardiac disease is a leading cause of indirect death and outnumbers hypertensive deaths. The underlying pathology has changed dramatically from 1950 to 1996. In the 1950's there were 250 deaths from mitral valve disease secondary to rheumatic heart disease

(>80% of cases of heart related deaths). In the 1990's there were 39 cases of heart related deaths secondary to congenital heart disease, ischemic heart disease and dissection but no maternal deaths from rheumatic heart disease.

Comments:

This article is both reassuring and humbling. Although maternal mortality rates have declined substantially there are still several maternal deaths per year that could be prevented by earlier recognition and better treatment. Over zealous use of fluids in women with hypertension in pregnancy and lack of prophylactic anticoagulation continue to be leading causes of maternal death. These should be a major focus for education of health care professionals involved in the care of pregnant women.

The generalizability of these results to other countries and health care systems is difficult. In the United States, the newly (1987) estabilished pregnancy-related mortality surveillance system was established to improve the reporting of maternal deaths. (1) The US mortality rates are similar to the UK. Due to differing definitions is cause of death, hemorrhage is more commonly the reported cause of death in the United States. Several populations have a greater risk of maternal mortality than the average population including African Americans and women > 40 years of age.

Continued surveillance of maternal mortality and identification of areas of substandard care is essential to continue to improve the safety of childbearing for women. . Preventative approaches must target high risk populations, and extend to the women in developing countries who continue to carry an exceptionally burden in childbearing.

References:

1. Berg CJ, Atrash HK, Koonin LM, Tucker M. Pregnancy-related mortality in the United States, 1987-1990. Obstet Gynecol 1996;88:161-7.