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Analysis looks at risk factors for direct maternal deaths in the UK

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Medical co-morbidities, when women have one or more medical conditions, are found to be an important factor associated with direct maternal deaths, suggests a new study published today (9 January) in *BJOG: An International Journal of Obstetrics and Gynaecology* (*BJOG*).

The research, led by the National Perinatal Epidemiology Unit at the University of Oxford and funded by the National Institute for Health Research (NIHR), used data from the recent MBRRACE Confidential Enquiry into Maternal Deaths and data on women who survived severe complications during pregnancy and childbirth from the UK Obstetric Surveillance System (UKOSS).

They looked at 135 women who died between 2009 and 2012 and a control group of 1,661 women who survived a severe life-threatening complication and examined factors associated with maternal death from direct pregnancy complications.

Five major causes of direct maternal deaths in the UK were included in the analysis: eclampsia, pulmonary embolism, severe sepsis, amniotic fluid embolism (AFE) and peripartum haemorrhage.

The researchers identified six factors found to be associated with maternal death after controlling for other variables. They found that 70% of the increased risk associated with maternal death could be attributed to these factors, the most important being medical co-morbidities, followed by previous pregnancy problems, hypertensive

disorders of pregnancy, inadequate use of antenatal care, substance misuse and Indian ethnicity.

Specific medical co-morbidities such as asthma, autoimmune diseases, inflammatory/atopic disorders, mental health problems, essential hypertension, haematological disorders, musculoskeletal disorders and infections were found to be associated with a higher risk of dying from the conditions included in this study. Medical co-morbidities contributed 49% of the increased risk of fatality in the study population.

Professor Marian Knight from the National Perinatal Epidemiology Unit at the University of Oxford and co-author of the paper said:

"Maternal death is rare in the UK, however each one is a tragedy and we must continue to seek ways of preventing them. We have used recent national data to investigate factors associated with maternal mortality in this analysis.

"The findings highlight the importance of optimal care for women with pre-existing medical problems in pregnancy. We found that uptake of antenatal care was poorer among women with medical co-morbidities which could increase adverse effects associated with these conditions. It is therefore vital that this group of women receive pre-conception counselling and extra support throughout their pregnancy.

"Further studies are needed to understand whether specific aspects of care could be improved to reduce maternal deaths among women in the UK, specifically amongst those women with one or more medical conditions."

John Thorp, BJOG Deputy-Editor-in-Chief, said:

"This UK study provides fresh insight into the factors behind direct

maternal deaths.

"Timely identification and appropriate management of factors that increase the risk of progression from severe maternal morbidity to mortality have the potential to improve pregnancy care and prevent deaths.

"Previous Confidential Enquiries into maternal deaths in the UK have identified that a number of women who die during or after pregnancy are substance misusers. This group of women need extra support in the antenatal and postnatal period and proactive treatment could lead to further lives being saved."

More information: *BJOG*, dx.doi.org/10.1111/1471-0528.13279

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