Clinical reviews

Our panel of GPs review recent research papers in their specialist areas that may influence the way you practise

Reviewers

Addiction
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Obstetrics and gynaecology

Mortality risk highest on the day of birth — unless you live till your nineties

The risk of a baby in the UK dying on the first day of life is higher than the average daily risk of death until the 92nd year, a study in the *BJOG* has shown.

The study from Nottingham looked at the risk of death on the day of birth, measured in MicroMorts, and compared this with risks at other ages and for a variety of activities. A MicroMort is a figure expressed as the number of one in a million chances of death associated with an activity or event.

Using data from the UK Office for National Statistics (ONS) the risk of intrapartum stillbirth in 2007 was 0.13/1,000 and neonatal death on the day of delivery 1.6/1,000.

Removing deaths arising from congenital abnormality and prematurity the residual risk of death on the day of delivery for a normally formed mature fetus was 0.43/1,000 births, or 430 MicroMorts. Equivalent figures for the United States and South Africa were 1,460 and 8,200 MicroMorts respectively.

Using other ONS data it was possible to calculate how the average MicroMort figure varied with age. After the day of birth the MicroMort figure drops rapidly with a nadir of around 0.2 (one in five million) at seven years of age.

The figure rises exponentially with age thereafter, doubling every eight years. It crosses the one MicroMort line (one in a million) at around the age of 15 years for boys and 25 for women. The 430 MicroMort line is not crossed until the age of 91 years. These are averaged figures for a population rather than for a given individual.

Risk attributable to particular activities can be similarly quantified and expressed in MicroMort form, see table 1, below.

Conveying the magnitude of risk to patients is part of everyday medical practice but sometimes this can be extremely difficult especially when the absolute risk is low as it is for perinatal mortality in the UK at 7.7/1,000 births. (Perinatal mortality is the sum of stillbirths after 24 weeks' gestation and neonatal death up to 28 days after birth.) The MicroMort provides a way of usefully illustrating that risk in understandable terms.

The authors conclude that to provide a safe environment, labour wards must be adequately staffed with suitably trained professionals, and that parents should be discouraged from underestimating the risks associated with childbirth.

An accompanying commentary, written by an academic mathematician concluded that MicroMorts 'provide ballpark figures to start important conversations, and if they use story-telling techniques of analogy and emotional response, without seeking to unduly manipulate behaviour, then these ideas should be welcomed.' [1]

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● Walker KF, Cohen AL, Walker SH et al. The dangers of the day of birth. *BJOG* 2014;121:714-718

REFERENCE
1 Spiegelhalter DJ. The power of the MicroMort *BJOG* 2014;121:662-663

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Table 1

Comparative risk of death for certain activities using MicroMort data

Activity	MicroMorts per day/event	430 MicroMort equivalent **
Population risk of non-natural death	1	16 months
Car travel	1 (230 miles)	160,000 miles
Train travel	1 (6,000 miles)	3.6 million miles
Motorbike travel	1 (6 miles)	3,400 miles
Commercial jet travel (USA)	-	2.9 million miles
Maternal mortality	2-5	-
Hysterectomy	40	-
Childbirth of mature normally formed fetus on day of birth	430	-
Single vessel CABG In USA	3,800	-
Scuba diving	-	96 dives
Sky-diving	-	48 jumps
Hang-gliding	-	60 jumps
Marathon running	-	70 runs
Service in armed forces, Afghanistan, May-October 2009	-	12 days
Flying with Bomber Command in WW II	-	8 minutes
Base jump, Kjerag Massif, Norway	-	1 jump

** MicroMorts for a mature normally formed fetus on day of birth = 430