This Month...

**Birth Defects**
- Folic acid supplementation influences the distribution of neural tube defect subtypes: A registry-based study
- Histological Evidence of Oxidative Stress and Premature Senescence in Preterm Premature Rupture of the Human Fetal Membranes Recapitulated in Vitro

**Newborn**
- Reducing unnecessary antibiotic use in the neonatal intensive care unit (SCOUT): a prospective interrupted time-series study.
- Global, regional, national, and selected subnational levels of stillbirths, neonatal, infant, and under-5 mortality, 1980–2015: a systematic analysis for the Global Burden of Disease Study 2015

**Publication**

**Improving Quality of Hospital Care for Maternal and Newborn Health**

**Report of the Regional Workshop New Delhi, 10 to 13 May 2016**

The Regional Workshop for Improving Quality of Hospital Care for Maternal and Newborn Health was organized to introduce the concept of hospital improvement process and build capacity of hospital teams focusing on care of mothers and new-borns at childbirth and early newborn care. Hospital teams consisting of health-care professionals (obstetrics, paediatricians, neonatologists and midwives) and a hospital manager from Member States were trained so that they could become advocates and role models for hospital improvement processes and facilitate subsequent initiatives in the countries. This is in line with the Regional Framework for Improving Quality of Care for RMNCAH that has been published by WHO-SEARO in collaboration with Member States and partners for providing support to countries to establish/strengthen and implement QI mechanisms.

[Read full text]
Birth Defects

Folic acid supplementation influences the distribution of neural tube defect subtypes: A registry-based study

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HIGHLIGHTS

- Folic acid (FA) reduces neural tube defect (NTD) risk.
- In EUROCAT data we studied NTD subtypes per FA intake group on the case level.
- The correct FA group had fewer cervical/thoracic and more lumbar/sacral spina bifida.
- Periconceptional FA seems to decrease NTD severity.

Abstract

Periconceptional folic acid (FA) reduces neural tube defect (NTD) risk, but seems to have a varying effect per NTD subtype. We aimed to study the effect of FA supplementation on NTD subtype distribution using data from EUROCAT Northern Netherlands. We included all birth types with non-syndromal NTDs born in 1997-2012. By Fisher's exact test we analyzed possible differences in NTD subtype distribution between a correct FA supplementation group and incorrect FA supplementation group. We found proportionally fewer cervical/thoracic spina bifida cases and more lumbar/sacral spina bifida cases in the correct FA supplementation group, irrespective of the presence of the main NTD risk factors. The effect on NTD subtype distribution was only seen when FA supplementation was started before conception. We conclude that FA not only prevents the occurrence of a significant proportion of NTDs, but might also decrease the severity of NTDs, as long as supplementation is started before conception.

Histological Evidence of Oxidative Stress and Premature Senescence in Preterm Premature Rupture of the Human Fetal Membranes Recapitulated in Vitro


Abstract

Preterm prelabor rupture of the membranes (pPROM) may lead to preterm births (PTBs). We investigated premature senescence of fetal membranes in women with pPROM and spontaneous PTB with intact membranes (60% of term cells were positive for all three senescence phenotype markers, and concentrations were higher than in PTBs (P < 0.05). p53 staining was comparable in membranes from PTB and term birth pregnancies, whereas only

MATERIAL & METHODS

This study was approved by the Western Institutional Review Board (Seattle, WA) and the institutional review board at the University of Texas Medical Branch (Galveston, TX; protocol 11-251 UTMB). Placental tissues from pPROM, PTBs, and normal-term births were obtained from individuals after obtaining written consent.

RESULTS

We examined 24 tissue samples from three different groups (term, PTB, and pPROM). Maternal age, marital status, ethnicity, prevalence of clinical and histologic chorioamnionitis, number of cigarettes smoked during pregnancy, and gestational age were similar between the pPROM and PTB with intact membranes groups. We excluded cigarette smokers from our term group to avoid any
DISCUSSION
In this study, we compared histologic evidence of cellular senescence and related biochemical markers in fetal membranes from term, PTB, and pPROM pregnancies. These data confirm our prior findings of high oxidative stress and accelerated senescence in pPROM and support our postulation that pPROM (especially early pPROM)
Global, regional, national, and selected subnational levels of stillbirths, neonatal, infant, and under-5 mortality, 1980–2015: a systematic analysis for the Global Burden of Disease Study 2015

Lancet. 2016 Oct 8;388(10053):1725-1774

GBD 2015 Child Mortality Collaborators

Abstract

BACKGROUND
Established in 2000, Millennium Development Goal 4 (MDG4) catalysed extraordinary political, financial, and social commitments to reduce under-5 mortality by two-thirds between 1990 and 2015. At the country level, the pace of progress in improving child survival has varied markedly, highlighting a crucial need to further examine potential drivers of accelerated or slowed decreases in child mortality. The Global Burden of Disease 2015 Study (GBD 2015) provides an analytical framework to comprehensively assess these trends for under-5 mortality, age-specific and cause-specific mortality among children under 5 years, and stillbirths by geography over time.

METHODS
Drawing from analytical approaches developed and refined in previous iterations of the GBD study, we generated updated estimates of child mortality by age group (neonatal, post-neonatal, ages 1–4 years, and under 5) for 195 countries and territories and selected subnational geographies, from 1980–2015. We also estimated numbers and rates of stillbirths for these geographies and years. Gaussian process regression with data source adjustments for sampling and non-sampling bias was applied to synthesise input data for under-5 mortality for each geography. Age-specific mortality estimates were generated through a two-stage age–sex splitting process, and stillbirth estimates were produced with a mixed-effects model, which accounted for variable stillbirth definitions and data source-specific biases. For GBD 2015, we did a series of novel analyses to systematically quantify the drivers of trends in child mortality across geographies. First, we assessed observed and expected levels and annualised rates of decrease for under-5 mortality and stillbirths as they related to the Sociodemographic Index (SDI). Second, we examined the ratio of recorded and expected levels of child mortality, on the basis of SDI, across geographies, as well as differences in recorded and expected annualised rates of change for under-5 mortality. Third, we analysed levels and cause compositions of under-5 mortality, across time and geographies, as they related to rising SDI. Finally, we decomposed the changes in under-5 mortality to changes in SDI at the global level, as well as changes in leading causes of under-5 deaths for countries and territories. We documented each step of the GBD 2015 child mortality estimation process, as well as data sources, in accordance with the Guidelines for Accurate and Transparent Health Estimates Reporting (GATHER).

FINDINGS
Globally, 5·8 million (95% uncertainty interval [UI] 5·7–6·0) children younger than 5 years died in 2015, representing a 52·0% (95% UI 50·7–53·3) decrease in the number of under-5 deaths since 1990. Neonatal deaths and stillbirths fell at a slower pace since 1990, decreasing by 42·4% (41·3–43·6) to 2·6 million (2·6–2·7) neonatal deaths and 47·0% (35·1–57·0) to 2·1 million (1·8–2·5) stillbirths in 2015. Between 1990 and 2015, global under-5 mortality decreased at an annualised rate of decrease of 3·0% (2·6–3·3), falling short of the 4·4% annualised rate of decrease required to achieve MDG4. During this time, 58 countries met or exceeded the pace of progress required to meet MDG4. Between 2000, the year MDG4 was formally enacted, and 2015, 28 additional countries that did not achieve the 4·4% rate of decrease from 1990 met the MDG4 pace of decrease. However, absolute levels of under-5 mortality remained high in many countries, with 11 countries still recording rates exceeding 100 per 1000 livebirths in 2015. Marked decreases in under-5 deaths due to a number of communicable diseases, including lower respiratory infections, diarrhoeal diseases,
measles, and malaria, accounted for much of the progress in lowering overall under-5 mortality in low-income countries. Compared with gains achieved for infectious diseases and nutritional deficiencies, the persisting toll of neonatal conditions and congenital anomalies on child survival became evident, especially in low-income and low-middle-income countries. We found sizeable heterogeneities in comparing observed and expected rates of under-5 mortality, as well as differences in observed and expected rates of change for under-5 mortality. At the global level, we recorded a divergence in observed and expected levels of under-5 mortality starting in 2000, with the observed trend falling much faster than what was expected based on SDI through 2015. Between 2000 and 2015, the world recorded 10.3 million fewer under-5 deaths than expected on the basis of improving SDI alone.

INTERPRETATION
Gains in child survival have been large, widespread, and in many places in the world, faster than what was anticipated based on improving levels of development. Yet some countries, particularly in sub-Saharan Africa, still had high rates of under-5 mortality in 2015. Unless these countries are able to accelerate reductions in child deaths at an extraordinary pace, their achievement of proposed SDG targets is unlikely. Improving the evidence base on drivers that might hasten the pace of progress for child survival, ranging from cost-effective intervention packages to innovative financing mechanisms, is vital to charting the pathways for ultimately ending preventable child deaths by 2030.

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