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This Month...

Birth Defects

- Estimating the burden of neural tube defects in low– and middle–income countries.
- Surveillance of congenital malformations in infants conceived through assisted reproductive technology or other fertility treatments.

Newborn

- Risk of birth defects associated with maternal pregestational diabetes.
- Motor impairment in very preterm-born children: links with other developmental deficits at 5 years of age.

Publications

2015 and beyond: the unfinished agenda of MDGs 4 and 5 in South-East Asia

A regional meeting on “2015 and beyond: the unfinished agenda of MDGs 4 and 5 in South-East Asia” was organized by the World Health Organization (WHO) Regional Office for South-East Asia, from 29 April to 1 May 2014 in Kathmandu, Nepal, with the aim to enhance commitment and accountability in the Member States of the Region towards achieving MDGs 4 and 5, and progressing beyond 2015. Countries reviewed the progress on the United Nations (UN) Secretary- General's Global Strategy for Women's and Children's Health and the Commission on Information and Accountability for Women's and Children's Health (CoIA) framework

Read full publication

Birth Defects

Estimating the burden of neural tube defects in low– and middle–income countries.

J Glob Health. 2014 Jun; 4(1): 010402. doi: 10.7189/jogh.04.010402

Annie Lo , Dora Polšek , and Simrita Sidhu
Author information

Abstract
Background
To provide an estimate for the burden of neural tube defects (NTD) in low– and middle–income countries (LMIC) and explore potential public health policies that may be implemented. Although effective interventions are available to prevent NTD, there is still considerable childhood morbidity and mortality present in LMIC.

Methods

A search of Medline, EMBASE, Global Health Library and PubMed identified 37 relevant studies that provided estimates of the burden of NTD in LMIC. Information on burden of total NTD and specific NTD types was separated according to the denominator into two groups: (i) estimates based on the number of live births only; and (ii) live births, stillbirths and terminations. The data was then extracted and analysed.

Results

The search retrieved NTD burden from 18 countries in 6 WHO regions. The overall burden calculated using the median from studies based on livebirths was 1.67/1000 (IQR = 0.98–3.49) for total NTD burden, 1.13/1000 (IQR = 0.75–1.73) for spina bifida, 0.25/1000 (IQR = 0.08–1.07) for anencephaly and 0.15/1000 (IQR = 0.08–0.23) for encephalocele. Corresponding estimates based on all pregnancies resulting in live births, still births and terminations were 2.55/1000 (IQR = 1.56–3.91) for total NTD urden, 1.04/1000 (IQR = 0.67– 2.48) for spina bifida, 1.03/1000 (IQR = 0.67–1.60) for anencephaly and 0.21 (IQR = 0.16–0.28) for encephalocele. This translates into about 190 000 neonates who are born each year with NTD in LMIC.

Conclusion

Limited available data on NTD in LMIC indicates the need for additional research that would improve the estimated burden of NTD and recommend suitable aid policies through maternal education on folic acid supplementation or food fortification.

Surveillance of congenital malformations in infants conceived through assisted reproductive technology or other fertility treatments.

Birth Defects Res A Clin Mol Teratol. 2015 Feb;103(2):119-26. doi: 10.1002/bdra.23355. Epub 2015 Feb 12.

Heisey AS 1 , Bell EM , Herdt-Losavio ML , Druschel C .

Author information

BACKGROUND:

As assisted reproductive technology (ART) becomes more common, it is important to understand the associated risks. The objective of this study was to determine if congenital malformations are associated with ART or other fertility treatments in New York.

METHODS:

In a retrospective cohort study of all live births in upstate New York from 1997 to 2005, exposure was defined using ART or other fertility treatments as noted on birth certificates. Outcomes were assessed from the New York State Congenital Malformations Registry. Specific malformations were examined to determine if there is elevated risk for exposed singleton infants compared with infants conceived naturally.

RESULTS:

The study included 7120 in the ART group, 11,890 in the other fertility treatments group and 1,118,162 in the comparison group. The relative risk for a congenital malformation was 1.43 (95% CI 1.19-1.72) for singleton infants conceived through ART compared with singleton infants conceived naturally. The specific defects associated with ART were patent ductus arteriosus, hypospadias, and obstructive defect in the renal pelvis and ureter, while spina bifida, other specific anomalies of the spinal cord, atresia or stenosis of the pulmonary valve, hypospadias, and obstructive defects of the renal pelvis and ureter were associated with other fertility treatment.

CONCLUSION:

Assisted reproductive technology is associated with a slight excess risk of birth defects . The specific congenital malformations with elevated risks for singleton infants vary depending on the exposure. Further research is necessary to understand the mechanism related to the increase in risk.

Newborn

Risk of birth defects associated with maternal pregestational diabetes.

Eur J Epidemiol. 2014 Jun;29(6):411-8. doi: 10.1007/s10654-014-9913-4. Epub 2014 May 27.

Vinceti M 1 , Malagoli C , Rothman KJ , Rodolfi R , Astolfi G , Calzolari E , Puccini A , Bertolotti M , Lunt M , Paterlini L , Martini M , Nicolini F .

Abstract

Maternal diabetes preceding pregnancy may increase the risk of birth defects in the offspring, but not all studies confirm this association, which has shown considerable variation over time, and the effect of having type 1 versus type 2 diabetes is unclear. We conducted a population-based cohort study in the Northern Italy Emilia-Romagna region linking administrative databases with a Birth Defects Registry. From hospital discharge records we identified all diabetic pregnancies during 1997-2010, and a population of non-diabetic parturients matched for age, residence, year and delivery hospital. We collected available information on education, smoking and drug prescriptions, from which we inferred the type of diabetes. We found 62 malformed infants out of 2,269 births among diabetic women, and 162 out of 10,648 births among non-diabetic women. The age-standardized prevalence ratio (PR) of malformation associated with maternal pregestational diabetes was 1.79 (95 % confidence interval 1.34-2.39), a value that varied little by age. Type of diabetes strongly influenced the PR, with higher values related to type 2 diabetic women. Most major subgroups of anomalies had PRs above 1, including cardiovascular, genitourinary, musculoskeletal, and chromosomal abnormalities. There was an unusually high PR for the rare defect 'extra-ribs', but it was based on only two cases. This study indicates that maternal pregestational type 2 diabetes is associated with a higher prevalence of specific birth defects in offspring, whereas for type 1 diabetic mothers, particularly in recent years, the association was unremarkable.

Motor impairment in very preterm-born children: links with other developmental deficits at 5 years of age.

Dev Med Child Neurol. 2014 Jun;56(6):587-94.

Van Hus JW , Potharst ES , Jeukens-Visser M , Kok JH , Van Wassenaer-Leemhuis AG .

Abstract

AIM:

To elucidate the relation between motor impairment and other developmental deficits in very preterm-born children without disabling cerebral palsy and term-born comparison children at 5 years of (corrected) age.

RESULTS:

Motor impairment (=15th centile) occurred in 32% of the very preterm-born children compared with 11% of their term-born peers (p=0.001). Of the very preterm-born children with motor impairment, 58% had complex minor neurological dysfunctions, 54% had low IQ, 69% had slow processing speed, 58% had visuomotor coordination problems, and 27%, 50%,and 46% had conduct, emotional, and hyperactivity problems respectively. Neurological outcome (odds ratio [OR]=41.7, 95% confidence intervals [CI] 7.5–232.5) and Full-scale IQ(OR=7.3, 95% CI 1.9–27.3) were significantly and independently associated with motor impairment. Processing speed (OR=4.6, 95% CI 1.8–11.6) and attention (OR=3.2, 95% CI1.3–7.9) were additional variables associated with impaired manual dexterity. These four developmental deficits mediated the relation between preterm birth and motor impairment.

INTERPRETATION:

Complex minor neurological dysfunctions, low IQ, slow processing speed,and hyperactivity/inattention should be taken into account when very preterm-born children are referred for motor impairment.