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This Month...

Birth Defects

- Pregnancy outcomes in women with inflammatory bowel disease following exposure to thiopurines and antitumor necrosis factor drugs: A systematic review with meta-analysis.
- Genetic Polymorphisms Involved in Folate Metabolism and Maternal Risk for Down Syndrome: A Meta-Analysis.

Newborn

- Combined tetanus-diphtheria and pertussis vaccine during pregnancy: Transfer of maternal pertussis antibodies to the newborn.
- Outcome of children with hereditary tyrosinaemia following newborn screening.

Publications

Capacity building for birth defects surveillance in South-East Asia

Birth Defects (BD) are progressively contributing to a greater proportion of infant and childhood mortality since the infectious causes are decreasing due to the extensive and successful use of immunization, control of diarrhoeal disorders and respiratory tract infections and improvement in health care services.

The burden of BDs in the SEA Region remains unknown because none of the Member States has a national-level mechanism for BDs. In the Regional Expert Group Meeting on the prevention of BDs, experts highlighted the need for capacity-building in BDs surveillance in the countries to define the magnitude of the problem, as well as monitor the progress of BD prevention programmes.

Read full publication

Birth Defects

Pregnancy outcomes in women with inflammatory bowel disease following exposure to thiopurines and antitumor necrosis factor drugs: A systematic review with meta-analysis.

Hum Exp Toxicol. 2014 Nov 5. pii: 0960327114550882. [Epub ahead of print]

Mozaffari S 1 , Abdolghaffari A 2 , Nikfar S 3 , Abdollahi M 4 . **Author information**

Abstract
Several studies have indicated the harmful effect of flare-up periods in pregnant women with inflammatory bowel disease (IBD) on their newborns. Therefore, an effective and safe medical treatment during pregnancy is of great concern in IBD patients. The aim of this study was to perform a meta-analysis on the outcomes of thiopurines use and a systematic review of antitumor necrosis factor (anti-TNF) drugs used during pregnancy in women with IBD. The results of cohorts evaluating the safety of anti-TNF drugs during pregnancy up to July 2013 were collected and analyzed. In the meta-analysis, a total of 312 pregnant women with IBD who used thiopurines were compared with 1149 controls (women with IBD who were not treated with any medication and women who were exposed to drugs other than thiopurines) to evaluate the drug effect on different pregnancy outcomes, including prematurity, low birth weight, congenital abnormalities, spontaneous abortion, and neonatal adverse outcomes. Results of statistical analysis demonstrated that congenital abnormalities were increased significantly in thiopurine-exposed group in comparison with control group who did not receive any medicine for IBD treatment. The summary odds ratio was 2.95 with 95% confidence interval = 1.03-8.43 (p = 0.04). We observed no significant differences in occurrence of other adverse pregnancy outcomes between compared groups. The results of cohorts evaluated the safety of anti-TNF drugs during pregnancy demonstrated no increase in occurrence of adverse pregnancy outcomes in comparison with controls except for the significant decrease in gestational age of newborns of drug-exposed mothers in one trial. In conclusion, a benefit-risk ratio should be considered in prescribing or continuing medicinal therapy during pregnancy of IBD patients.

Genetic Polymorphisms Involved in Folate Metabolism and Maternal Risk for Down Syndrome: A Meta-Analysis.

Dis Markers. 2014;2014:517504. Epub 2014 Dec 4. Balduino Victorino D 1 , de Godoy MF 2 , Goloni-Bertollo EM 1 , Pavarino ÉC 1 . **Author information**

Abstract:
Inconclusive results of the association between genetic polymorphisms involved in folate metabolism and maternal risk for Down syndrome (DS) have been reported. Therefore, this meta-analysis was conducted. We searched electronic databases through May, 2014, for eligible studies. Pooled odds ratios with 95% confidence intervals were used to assess the strength of the association, which was estimated by fixed or random effects models. Heterogeneity among studies was evaluated using Q-test and I 2 statistic. Subgroup and sensitivity analyses were also conducted. Publication bias was estimated using Begg's and Egger's tests. A total of 17 case-controls studies were included. There was evidence for an association between the MTRR c.66A>G (rs1801394) polymorphism and maternal risk for DS. In the subgroup analysis, increased maternal risk for DS was found in Caucasians. Additionally, the polymorphic heterozygote MTHFD1 1958GA genotype was associated significantly with maternal risk for DS, when we limit the analysis by studies conformed to Hardy-Weinberg equilibrium. Finally, considering MTR c.2756A>G (rs1805087), TC2c.776C>G (rs1801198), and CBS c.844ins68, no significant associations have been found, neither in the overall analyses nor in the stratified analyses by ethnicity. In conclusion, our meta-analysis suggested that the MTRR c.66A>G (rs1801394) polymorphism and MTHFD1 c.1958G>A (rs2236225) were associated with increased maternal risk for DS.

Newborn

Combined tetanus-diphtheria and pertussis vaccine during pregnancy: Transfer of maternal pertussis antibodies to the newborn.

Vaccine. 2015 Jan 5. pii: S0264-410X(14)01717-4. doi: 10.1016/j.vaccine.2014.12.062

Vilajeliu A , Goncé A , López M , Costa J , Rocamora L , Ríos J , Teixidó I , Bayas JM .

BACKGROUND AND OBJECTIVES:
Pertussis is currently an emerging public health concern in some countries with high vaccination coverage. It is expected that maternal pertussis immunization could provide newborn protection. We compared pertussis toxin antibody (anti-PT) levels in women during pregnancy (pre- and post-vaccination) with respect to levels in the newborn at delivery in women vaccinated during pregnancy. We also estimated anti-PT titers at primary infant vaccination.

METHODS:
Observational study of pregnant women vaccinated with Tdap (=20 weeks gestation) and their newborns between May 2012 and August 2013. Anti-PT levels were determined by ELISA in maternal (pre- and post-vaccination) and newborn blood.

RESULTS:
Pre-vaccination, post-vaccination maternal and newborn samples were available in 132 subjects. Mean maternal age was 34.2 (SD 4.3) years. Median weeks of gestation at vaccination were 27.2 (Q1-Q3 21.7-30.8). Anti-PT (=10IU/ml) levels were found in 37.1% of maternal pre-vaccination samples (geometric mean titer (GMT) 7.9IU/ml (95% CI 6.8-9.2)), 90.2% of post-vaccination samples (GMT 31.1IU/ml (95% CI 26.6-36.3)) and 94.7% of newborns (GMT 37.8IU/ml (95% CI 32.3-44.1)). The Lin concordance index between post-vaccination maternal and newbornsamples was 0.8 (95% CI 0.8-0.9). Transplacental transfer ratio was 146.6%. At two months of age, 66% of newborns had estimated anti-PT levels =10IU/ml.

CONCLUSION:
There was a high correlation between anti-PT levels in mothers and newborns, with higher levels in newborns, which should be sufficient to provide protection against pertussis during the first months of life. Vaccination of pregnant women seems to be an immunogenic strategy to protect newborns until primary infant immunization.

Outcome of children with hereditary tyrosinaemia following newborn screening.

Arch Dis Child. 2015 Jan 6. pii: archdischild-2014-306886.

McKiernan PJ, Preece MA, Chakrapani A.

BACKGROUND
Nitisinone has transformed the management of hereditary tyrosinaemia type 1 (HT1). However, the risk of developing hepatocellular carcinoma is related to the age at which treatment is commenced. Little data on the outcome of children treated pre-emptively exist.

AIM:
To describe the outcome of children with HT1 treated with nitisinone following selective newborn screening (NBS) and to compare their outcome with index siblings who had presented clinically..

SUBJECTS:
12 children with HT1 were detected by NBS. Seven children were screened for HT1 because of an affected sibling (n=5). Four children were detected due to raised tyrosine concentrations on routine NBS and one child was born in a country with universal NBS for HT1.

OUTCOME:
Nitisinone was commenced at 4 (1-52) days old. 6 children had an initial coagulopathy which resolved after 4 (1-7) days treatment. Currently at median age 8.5 (3-12.5) years all are clinically normal, with normal liver function tests and imaging. Those of school age are in normal classes but four have reported learning difficulties. Five index siblings presented clinically with acute liver failure (four) and chronic liver disease (one) at median 4 (1.5-17) months. One died of liver failure prior to nitisinone's availability. Four were treated with nitisinone; one failed to respond and underwent liver transplantation and three responded. One responder died from complications of prematurity and the remaining two have compensated liver disease.

SUMMARY:
Children with HT1 treated with nitisinone following NBS have an excellent outcome..