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MONITORING FOR HYPOGLYCAEMIC NEWBORNS – SHOULD WE EXPAND OUR RISK CATEGORIES?

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10.1136/archdischild-2018-rcpch.482

Background and objectives Universal hypoglycaemia monitoring of newborns is not recommended. We wished to determine the incidence, presentation and case characteristics of hypoglycaemic newborns that were not being monitored.

Methods Through the Canadian Paediatric Surveillance Program we conducted a national study of severe hypoglycaemia in apparently low-risk full-term newborns. Inclusion criteria were: an otherwise healthy infant less than 96 hours old; gestational age 37–42 weeks; birth weight 2500–3999 grams; whole blood or serum glucose less than 2.0 mmol/L and IV dextrose used to treat the hypoglycaemia. Data were managed and analysed using IBM SPSS Statistics for Windows, Version 24.0 (Armonk, NY: IBM Corp.).

Results From April 2014 to March 2016, 177 cases were reported. There were 5 duplicates, 33 cases did not meet inclusion criteria and 46 questionnaires were not returned, leaving 93 confirmed cases. The estimated incidence was 1 in 8378 births. All cases were singletons, 56% were first-borns and 65% were male. An 8% rate of First Nations cases was 3-fold the population rate. Maternal hypertension was present in 23%, 4-fold the overall pregnancy rate. Maternal obesity was double the overall pregnancy rate at 23%. Concerning signs or feeding issues were present at diagnosis in 98%. Median time to diagnosis was 4.1 hours. Mean blood glucose was 1.4 ± 0.5 hours (SD). Seventy eight percent had at least one of 4 potential perinatal stress indicators (emergency Caesarean Section, meconium at delivery, requiring resuscitation or cord artery pH <7.10). Those cases were more likely to be diagnosed before 6 hours ($p=0.03$). Twenty five percent (23 cases) were small for gestational age (SGA) with birth weight <10 th centile, of which 5 had seizures and 5 had hyperinsulinism. Presentation with major clinical signs (seizure, apnoea or cyanosis) occurred in 20%. Neurodevelopmental concern was present in 20% of all cases. Amongst 13 cases which had brain MRI, 11 were abnormal.

Conclusion While acknowledging the study's limitations, the impact of First Nations origin, maternal obesity, maternal hypertension and perinatal stress indicators warrant further study and possible incorporation into glucose monitoring guidelines. The data further supports adoption of norm-based standards to identify and monitor all SGA infants.

Funding Supported by grants from Queen's University Faculty of Health Sciences and the Public Health Agency of Canada.

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TEN YEARS OF ALCOHOL INTOXICATIONS IN ADOLESCENTS AND TREATMENT IN PAEDIATRIC DEPARTMENTS IN DUTCH HOSPITALS

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10.1136/archdischild-2018-rcpch.483

Aim Alcohol intoxication in children and adolescents is a severe health concern in current paediatrics. In this longitudinal study we monitored intake and treatment of 5893 adolescents in Departments of Paediatrics in Dutch hospitals over the years 2007 to 2016.

Methods From 2007 till 2016 we collected data on all adolescents (inclusion criteria: aged younger than 18 and with a positive blood alcohol concentration (BAC), treated by a paediatrician in all Dutch hospitals. Within the Dutch Paediatric Surveillance System (NSCK), all paediatricians report adolescents and fill in a questionnaire, making use of a patient interview.

Results In total 5893 adolescents were treated, mainly (4,678; 88%) related to severe alcohol intoxication; mean age was 15.4 years, and 52% were boys. BAC level increased during this period (1.82 in 2007 and 2.01 in 2016), and reduced consciousness lasted from 2.24 hours in 2007 till 3.12 hours in 2016). 11.4% Of the adolescents with alcohol intoxication had simultaneous drug usage. The attitude of the parents changed during the years: in 2011 (first year of registration) 68% of the parents gave permission to their child to drink alcohol, in 2016 this decreased to only 19%.

Conclusions alcohol intoxication treatment remains an issue of importance. This dataset enables us to conduct longitudinal and interesting analyses on alcohol intoxication characteristics in youngsters, medical treatment, and events leading up to the intoxication.

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NUTRITIONAL RICKETS PRESENTING TO SECONDARY CARE IN CHILDREN (<16 YEARS) – A UK SURVEILLANCE STUDY

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10.1136/archdischild-2018-rcpch.484

Aims Rickets is a disease of growing children with serious short and long-term complications. Although the prevalence of rickets has been reported widely to be increasing the actual national incidence of nutritional rickets (NR) in the United Kingdom (UK) is unknown. This study aims to describe the incidence, presentation, and clinical management of children with NR in the UK and ROI.

Methods Data was collected prospectively monthly between March 2015-March 2017 from 3500 paediatricians using British Paediatric Surveillance Unit reporting methodology with the following definition (table 1):

Abstract I16 Table 1

Clinical rickets with any of the following:

- Leg deformity/Swollen wrists or knees or ribs AND 250 hour vitamin D<25 nmol/L with one or more abnormalities of serum calcium, alkaline phosphatase, phosphate, parathyroid hormone

OR

Radiological rickets with:

- Widening, cupping, splaying of metaphysis (of any long bone) AND 250HVitamin D<25 nmol/L

Results 130 cases met the case definition with an overall annual incidence of 5.04 cases per million children under 16 years.

London, East Midlands, West Midlands and Scotland had estimated incidences above the national incidence. Boys (91/130; 70%) were significantly more affected than girls (39/130; 30%) and the majority were of Black (44.6%) and South Asian (36.2%) ethnicity with a median age of 18 months. The commonest clinical presentations were bowed legs, swollen wrists and radiological rickets. Comorbidities included fractures (15/130; 11.5%) hypocalcaemic seizures (11/130; 8.5%), and dilated cardiomyopathy (4/130; 3%). Two children died of dilated cardiomyopathy from vitamin D deficiency. The commonest associated conditions were cows milk protein allergy (19/51; 19%;) iron deficiency (8/51; 7%) and eczema (8/51; 7%). At the time of diagnosis 77% of children were not receiving vitamin D supplements. 19 children had rickets despite being reported to be receiving appropriate supplementation. All confirmed radiological cases had either high parathyroid hormone and/or low phosphate. Following diagnosis, most clinicians initially prescribed treatment themselves, with huge variation in duration of prescriptions. In a further 10 cases, rickets was confirmed but excluded in the incidence analysis, for not meeting the case definition (specifically Vitamin D < 25 OHnmol/L), suggesting both dietary calcium deficiency and vitamin D insufficiency as role-players in the presentation of NR in the UK.

Conclusions NR continues to affect children in the UK with serious sequelae. Uptake of vitamin D supplementation remains low and constitutes a failure of current public health policy. A UK national policy focusing on vitamin D and calcium supplementation and adherence is required to eliminate this entirely preventable condition.

117 REDUCED RATES OF JUVENILE ONSET RECURRENT RESPIRATORY PAPILLOMATOSIS IN AUSTRALIA AFTER IMPLEMENTATION OF A NATIONAL HPV VACCINATION PROGRAM

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10.1136/archdischild-2018-rcpch.485

Aims Juvenile onset Recurrent Respiratory Papillomatosis (JoRRP) is a rare chronic disease caused by human papilloma-virus (HPV) types 6 and 11. Children with RRP require multiple surgical interventions; tracheostomy may be needed and sometimes the disease is fatal. Infections are now preventable through HPV vaccination. Following an extensive quadrivalent HPV vaccine catch-up program for females aged 12–26 years

in 2007–2009, in Australia, we aimed to monitor the changes in incidence and demographics of JoRRP over time.

Methods The Australian Paediatric Surveillance Unit (APSU) conducted national surveillance for JRRoP using its well established reporting system. In addition to the ~1450 paediatricians who report to the APSU each month, paediatric otorhinolaryngologists were also enrolled in the APSU and offered HPV typing. We report findings for the five-year period to end 2016.

Results The average annual incidence rate was 0.0715 per 1 00 000 children aged <16 years. The largest number of cases was reported in the first year, with decreasing annual frequency thereafter. The rate declined significantly from 0.163 per 1 00 000 in 2012 to 0.024 per 1 00 000 in 2016 ($p=0.034$). Among the 15 incident cases 60% male, 60% were first born children and 13 (87%) were born vaginally. None of the mothers of these children had received the HPV vaccine before pregnancy, and 3 (20%) of the mothers had a history of genital warts. Seven genotyped cases were positive for HPV including 4 that were HPV6 positive and 3 that were HPV11 positive.

Conclusion To our knowledge this is the first report internationally documenting decline in JoRRP incidence in children following a quadrivalent HPV vaccination program.

118 THE NATIONAL CONGENITAL ANOMALY AND RARE DISEASE REGISTRATION SERVICE (NCARDS): THE FIRST YEAR

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10.1136/archdischild-2018-rcpch.486

Background Congenital anomalies (CA) cause around a fifth of infant deaths and are a major contributor to subsequent illness and disability. Regional registers of CA have existed for over 30 years but an effective national registration system has long been needed. More recently, in recognition that collectively Rare Diseases are thought to affect up to 3.5 million people in UK, rare disease registration has been planned which will align with parallel European initiatives.

Methods From April 2015 Public Health England launched NCARDS, incorporating the 7 existing regional CA registers and the National Down Syndrome Cytogenetic Register. Those regions not previously covered (51% of England) were added. A central database was developed for the accrual of new cases and into which to import data held in the pre-existing registers. New data sources for case ascertainment and import of supporting data, such as cytogenetic laboratory feeds, links to BadgerNet neonatal, and Hospital Episode data, have been developed. Pilot work and database development for Rare Disease ascertainment is ongoing. The analysis we report was based on data aggregated from 4 of the pre-existing NCARDS regions.

Results There were 2905 cases with at least one congenital anomaly among 1 41 474 (21%) of births in England in 2015. CA accounted for 17% of infant deaths, half of which were from cardiac anomalies. Two thirds of anomalies were diagnosed prenatally; of those diagnosed postnatally for which there was information on timing, three quarters were diagnosed in the first postnatal week. Rates of non-genetic