TRENDS IN INJURY RELATED FATALITIES IN THE IRISH PAEDIATRIC POPULATION: A REVIEW OF NATIONAL MORTALITY DATA

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Background Injury is a leading cause of childhood death throughout the EU. For every fatality many more children are seriously injured and a large proportion left permanently disabled. Age specific, population based data is required to enable accurate assessment of the magnitude and characteristics of the injury problem.

Objective To determine the burden of accident and injury related childhood mortality in Ireland by determining the prevalence and characteristics of intentional and unintentional injury related deaths over a twelve year period from 2006 to 2017.

Design Retrospective review of cause of death information on all deaths <15yrs, registered in Ireland from 2006−2017, with additional detailed information retrieved from autopsy reports reviewed by paediatric pathologists.

Results A total of 4,443 paediatric deaths (<15yrs) were registered in Ireland during 2006–2017, 49% of which were aged >28 days. Beyond infancy the leading cause of childhood death during this period (26.5%) was accident and injury. Most were unintentional accidents, children 1−4yrs being most susceptible (3.9/100,000 vs. 2.8/100,000 1−14yrs). Proportionate injury mortality increased gradually with age ranging from <1% of neonatal deaths to 36% of deaths in children 10−14yrs. Road traffic accidents (RTA) accounted for the greatest proportion of accidental injury deaths across all ages (33%). Other important causes of injury death in younger children 1−4yrs were drowning (8%) fires/burns (7.2%), high falls (6.4%) and accidental strangulation (5.6%), while fires/burns (12.7%) and drowning (8.9%) accounted for a greater proportion of deaths in children 5−9yrs. Interpersonal violence accounted for at least 9.5% of all injury deaths and 1.6% of child mortality overall. The rate of injury fatalities in children 1−14yrs has declined by 40% over the period from 2007 to 2016; from an average of 4.2 deaths/100,000 in 2007−2011 to 2.4 per 100,000 in 2012−2016, due largely to a significant decline in RTA fatalities during this period. A male preponderance of deaths was apparent for all categories of injury particularly drowning (88%), accidental strangulation (75%) and falls (69%).

Conclusions Although welcome reductions in childhood mortality rates have been observed in Ireland in recent years, 26.3% of child deaths, attributable to accident and intentional injury are potentially avoidable and warrant further attention. National, age-specific data relating to the nature and circumstances of such deaths will assist in providing evidence based information with which to inform effective intervention strategies.
The aim of this study was to review admissions for complications secondary to VZV infection over a six month period (January - July 2017) in a Dublin paediatric hospital. The VZV vaccine is currently available in Ireland but not included on the childhood universal immunisation programme. 

Method Patients who were admitted to Children's University Hospital Temple Street (CUHTS) with complications secondary to VZV infection were identified. These patients' demographics, symptoms and management were recorded and analysed.

Results Thirteen children were admitted to CUHTS between January and July 2017 as a result of complications of chickenpox infection. Five children were male. The ages ranged from 27 weeks to 7 years (median=1.5 years). All children were previously well, with no history of immunodeficiency. All patients had commenced the routine vaccination schedule but none had received the VZV vaccine.

Complications included cellulitis, osteomyelitis, septic arthritis, encephalitis, toxic shock syndrome, sepsis, and intracranial abscess. Some patients had several complications at once. The length of time from VZV infection to onset of complication ranged from no history of chickenpox (but VZV identified on CSF PCR) to 17 days after the rash had crusted over (median=4.5 days). Six children (46%) had Group A Streptococcus identified as a causative organism for their complication.

The length of hospital stay ranged from 1 day to 27 days (median=6). One child was admitted to PICU for 9 days. Two patients required surgery (orthopaedic, ENT and neurosurgery). Four patients required >6 weeks of antibiotics. All children had varying levels of outpatient follow up and treatment.

Conclusion While the majority of VZV cases are mild and self-limiting, there is significant patient morbidity and healthcare costs associated with severe or complicated varicella infections. Permanent disability occurs particularly with intracranial and orthopaedic complications. There is an added economic impact for parents taking time off work to be with their sick child. We believe that universal VZV vaccination needs to be reconsidered.

It is well known that obstetricians are trying to reduce the percentage of cesarean sections and related complications in recent years, so the features of pregnancy and delivery are very important for neonatal ophthalmology. The importance of the study of conjunctival cavity microflora is increasing due to improvement of the technologies of intraocular interventions which are performed in even earlier terms than in the past, and due to necessity for adequate perioperative prevention of their infectious complications. Presently neonatal ophthalmia is a serious problem as well.

Prevention of neonatal ophthalmia has been carried out since 1881. Nowadays many eye treatment schemes which are used after the birth of a child have been proposed. 1% tetracycline ointment is usually used in Russia at present time.

The purpose of our research was to study the nature of the microflora of the conjunctival cavity in newborn children born by natural delivery, and to determine the sensitivity of the isolated microorganisms to antibacterial drugs used in pediatric ophthalmology as well.

60 naturally delivered newborns (120 eyes of 29 girls and 31 boys) were examined. The average gestational age was 38.8 ± 1.39 weeks. In 46 cases, the amniotic fluid was bright, in 14 - meconium colored. Staph. Epidermidis were isolated in 26.4% of cases from the cervical canal of women, lactobacilli were - in 17.15% of cases, the swab was sterile in 56.45% of cases.

Sensitivity of the extracted microflora to the antibacterial drugs used in ophthalmology (aminoglycosides, macrolides, fluoroquinolones, tetracyclines, penicillins) was determined by the disco-diffusion method.

Microflora from the conjunctival cavity was not found only in 28.33% of the cases of natural delivery. Coagulase-negative staphylococci were detected in 35% of the cases, E. Coli in 18.3%. Mixed-flora was found in 15% of the cases. The isolated microorganisms were 100% sensitive to fluoroquinolones (ciprofloxacin, levofloxacin and moxifloxacin), resistance to azithromycin was 48.7%, and to tetracycline - 28.2%.

 Conjunctival cavity of newborn babies born naturally remains sterile only in 28.33% of the cases, regardless of the degree of microbial contamination of the mother’s cervical canal.

Coagulase-negative staphylococci were found in 35% of cases with clinically healthy children, who were born naturally from healthy women. 19% of those are methicillin-resistant strains. The isolated microflora of the conjunctival cavity of newborns is most sensitive to fluoroquinolones, ciprofloxacin and moxifloxacin, which must be taken into account in perioperative preparation when planning intraocular surgical interventions.