GP2

HEAD INJURIES IN CHILDREN UNDER 1 YEAR IN CHILDREN'S UNIVERSITY HOSPITAL, TEMPLE STREET

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Introduction Head injury in children is a common presentation to emergency departments (ED). Specific age groups are difficult to assess, particularly children <1 year of age. This leads to a high rate of admission even when not clinically indicated. The aim of this study was to evaluate our current practice and establish an evidence base to direct future guidelines on head injury admissions.

Methods A retrospective audit of all children <1 year admitted to Temple Street for head injury in 2017 was undertaken. Data was recorded from the ED 'Symphony' system and HIPE coding, including age, mechanism of injury, neuro-imaging (NICE criteria, modality, timing, findings), neurosurgical intervention, child protection concerns (CPC), outcomes and follow-up.

Results Study population was 403, 96 of which were admitted. The median age was 3 months. The most common mechanism of injury was fall from a bed/couch/mat (26%) followed by fall from a carrier seat unrestrained (21.8%).

13 had a CT head (CTH) all meeting NICE criteria. 8 had a skull x-ray (SXR), 5 of which required CTH. 2 additional infants met criteria for CTH but didn't have one (as GCS rapidly improved). All CTH were abnormal with skull fractures identified. 3 required neurosurgical intervention. All 13 were followed in neurosurgical clinic. Neuro-observations ranged from 4–24 hours in patients not requiring CTH.

Initial CPC were raised in 9 cases with medical social work (MSW) involvement in all cases. 6 Skeletal surveys (SS) were performed; 4 Non-accidental injury (NAI) work-up and 2 following a dangerous mechanism of injury. 11 patients represented with a further head injury. In 2, CPC were noted with MSW involvement, with one further SS.

Discussion With no indications for CTH or CPC, neuro-observations are performed up to 24 hours. With early senior involvement this can be as short as 4 hours. Although NICE gives no specific duration for neuro-observations, with our consistently good outcomes and low representation rates, it may be safe to shorten admissions.

ED staff recognised CPC in all cases, made a MSW referral and flagged this to the admitting teams. 5 referrals progressed to a full NAI workup with no additional injuries or concerns noted on MSW assessment. No admitted cases proceeded to CP case conference. This indicates that our paediatric ED staff are aware of and are looking for potential CP red flags. Further prospective study of patients discharged following observation in ED is indicated.

GP3

'FORGOTTEN BABY SYNDROME': A SYSTEMATIC REVIEW AND ANALYSIS OF CAREGIVER INTENTION

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Aims Each year around 37 children in the US alone are killed by heatstroke through being left unattended in vehicles. In the past, caregivers of these children have been charged with

neglect or manslaughter. In recent cases such as Noah Zunde (2017), inquests have drawn on expert witnesses who have expanded on a psychological basis for these cases, pointing at an 'overriding' habitual memory i.e. the routine of taking a child to playgroup. The term 'forgotten baby syndrome' has come to prominence to describe a scenario whereby a child comes to injury by being unintentionally left in a car. The implication being that a parent could be acquitted of manslaughter if the child was truly forgotten. This may have far reaching consequences for defining neglect. We completed a literature review to assess the proportion of unintentional vs intentional cases where a child was injured by heatstroke by being left unattended in a vehicle.

Methods A systematic review of the literature was completed on Medline. In addition data was taken from the US national safety council via noheatstroke.org.

Results The USA national safety council reviewed 743 child deaths from heatstroke after being left unattended in a vehicle from 1998–2017 in 54% the child was unintentionally left, 27% the child gained access to the vehicle, 18% the child was intentionally left and 1% circumstances were unknown. A Brazilian study (Costa 2016) identified 31 cases (20 fatal) in which 71% were unintentional, 3% child gained access, 23% were intentional and 3% unknown. A small Italian study (Ferrara 2013) identified 16 cases (2 fatalities) of which 18% were unintentional, 75% were intentional and 6% unknown.

Conclusion Most children who die through being left unattended are reported to have been left in vehicles unintentionally. Further research is required to establish what initiatives work, if most cases are truly unintentional, public health strategies that merely explain the dangers of leaving a child unattended such as the American, 'It Can Happen' are less likely to be successful – parents may be aware of the danger, but simply forget the child is in the vehicle. Future interventions that are universal such 'child reminder systems' in cars may be more successful. The difference between 'forgotten baby syndrome' and neglect remains difficult to define.

GP4

DE-LABELLING BETA-LACTAM ALLERGY IN CHILDREN IN AN OUTPATIENT SETTING USING A SINGLE DOSE PROTOCOL

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Background and aims Up to 5% of children report a reaction to a beta-lactam antibiotic. This is commonly a rash which occurs in the setting of a viral illness. These children are often labelled with a drug allergy.

Previous studies on drug allergy in children have involved skin prick testing, intradermal testing and graded dose challenges in the hospital setting. This study was conducted to explore the diagnosis of drug allergy in a selected low-risk cohort of 'beta-lactam allergy labelled' children, using risk stratified, single dose, oral beta-lactam challenges, potentially reproducible in primary care.

Methods Children aged 1–16 yrs. old from primary, secondary and tertiary care in the Connacht area were invited; recruitment is ongoing; a target of 100 patients has been set. Participants are screened via a detailed telephone consultation using a non-standardised questionnaire to ensure they meet the inclusion criteria: single, non-immediate (>1 hour) skin rash or other symptoms compatible with an allergic reaction after beta-lactam including urticaria or angioedema occurring > 1 hour and persisting > 12 hours. Exclusion criteria are: immediate allergic reaction < 1 hour; or > 1 hour but resolving within 12 hours; cardiorespiratory involvement; multiple antibiotic allergy, atypical/severe drug reaction or IV beta-lactams and insufficiently controlled asthma. Eligible candidates attend an outpatient visit, are confirmed as clinically well, including pre-challenge temperature and cardio-respiratory exam. A single, age-appropriate dose of the causative beta-lactam is administered. Visual assessment is performed every 30 minutes for 2 hours; adverse events recorded and managed accordingly. A 5-day beta-lactam course is prescribed to negative challenge participants. Delayed hypersensitivity and parental satisfaction is assessed via follow up phone-call 6 days post-challenge. Study approval by the hospital clinical research ethics committee was obtained.

Results To date, 76 children (16 months to 15 years) have been enrolled; 59 have undergone pre-challenge screening; with skin rash being the main indication (53/59, 90%). Six/seventy-six (8%) were excluded, one withdrew; 17 children are from secondary care, 55 from primary care, 4 self-referrals. Twenty-five children have completed the challenge (24 amoxicillin, 1 flucloxacillin) with no reactions. Parents reported high satisfaction with the challenge process and confidence in using a beta-lactam antibiotic in the future.

Conclusion This study demonstrates that performing a streamlined, single dose, oral challenge to low risk patients in an outpatient setting is feasible, safe and acceptable to participants. This method may be reproducible in primary care.

GP5

THE IMMUNOGENETICS AND RISK FACTORS OF POLLINOSIS AMONG RUSSIAN CHILDREN. CASE-CONTROL STUDY

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Background and aim Pollinosis is an allergic disease that manifests during spring or summer with symptoms of allergic rhinitis, conjunctivitis, asthma and atopic dermatitis. In Russia the most common reason for pollinosis is birch and grass pollen. Since pollinosis is a multifactorial disease, the aim of this study was to investigate the association between polymorphic markers of candidate genes and the development of the disease.

Methods and patients The genotypes of polymorphic markers of genes-candidates (IL4, IL4R, IL13, IL33, IL6, TLR4, MMP9) were examined by Real-time PCR for a group of

131 children 5–17 y.o. (average age 10.9, 81 boys and 50 girls) with pollinosis and for a control group of 78 healthy children. 86% of children with pollinosis had any family history of allergy, 58% had one allergic parent (33% - allergic mother, 25% - allergic father); 20% had both allergic parents; 51% had some family history of pollinosis. 75% of patients had atopic dermatitis while being toddlers. The average age of pollinosis debut was 4.9 ± 2.8 . The diagnosis of pollinosis was confirmed by the positive skin prick tests or by high level of specific IgE to tree or grass pollen in blood serum.

Results We reveal a statistically significant association of the rs1805010 of IL4R gene with pollinosis. The children with GG genotype of rs1805010 had increased risk of pollinosis compared with healthy controls ($P = 0.010$; $OR = 3.73$; 95% CI, 1.24 – 11.28). Moreover, there was a tendency to increase the allele C frequency of the rs1805015 of the IL4R gene in children with pollinosis ($OR = 1.81$, $p = 0.040$). No significant association was found with other polymorphisms.

Conclusion The results of the present study revealed an association of cytokine gene polymorphism IL4R rs1805010 with pollinosis. Our results indicate a high predictive value of this polymorphic marker for the development of pollinosis in Russian pediatric population.

GP6

POOR CONTROL OF ALLERGIC DISEASE AMONG ADOLESCENTS

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Background The prevalence of food allergy in adolescents varies with estimates of 2.3–4.5% in different populations (1,2). This group are a vulnerable population. They are at greater risk of fatal anaphylaxis and fatal asthmatic episodes. In Ireland, they have a potential further risk in that most have not had an opportunity to see an allergist through childhood due to extremely limited access.

Aims To examine the presence of risk factors for poorly controlled allergic disease identifiable in adolescent patients on the routine waiting list (WL) in the allergy department.

Methods Adolescents attending their first allergy clinic appointment who were on the routine outpatient WL were included between September- December 2017. Clinical data pertaining to each adolescent's allergic disease was collected at this appointment. A scoring system was utilised to numerically grade the cause for concern for each adolescent after review in clinic. A 1A point was awarded for each major concern identified and a 1B point was awarded for each moderate concern identified.

Results Data was collected on 17 adolescents over the 3-month period. The primary reason for referral in all patients was investigation of food allergy. Ten were referred by GPs, 5 by general paediatricians and 2 by dermatologists. 15/17 adolescents had between 1–3 criteria for major concern; uncontrolled asthma ($n=6$), recurrent reactions while on the WL ($n=11$), anaphylaxis while on WL ($n=3$), no AAI prescribed ($n=4$). 14/17 had criteria for moderate concern; not carrying a prescribed in date AAI ($n=9$), poorly controlled allergic rhinitis ($n=10$), social isolation ($n=3$). The highest score was 3A + 1B in 2 adolescents.