British Paediatric Allergy Immunity and Infection Group

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FEVER IN HIGH-RISK PAEDIATRIC PATIENTS PRESENTING TO EUROPEAN EMERGENCY DEPARTMENTS: THE PERFORM EXPERIENCE

¹Fabian van der Velden, ²Maria Tsolia, ³Enitan Carrol, ⁴Michael Levin, ⁵Werner Zenz, ⁶Henriëtte Moll, ⁷Dace Zavadska, ⁸Federico Martinon-Torres, ⁹Michiel van der Flier, ¹⁰Marieke Emonts, ¹¹Perform Consortium. ¹Paediatric Immunology, Infectious Diseases, and Allergy Department; Great North Children's Hospital, Newcastle upon Tyne, UK; Translational and Clinical Research Institute, Newcastle University, Newcastle upon Tyne, UK; ²Second Department of Paediatrics, National and Kapodistrian University of Athens, P. and A. Kyriakou Children's Hospital, Athens, Greece; ³Institute of Infection, Veterinary and Ecological Sciences, University of Liverpool, Liverpool, UK; ⁴Section of Pediatrics, Imperial College London, London, UK; ⁵Department of Pediatrics and Adolescent Medicine, Division of General Pediatrics, Medical University of Graz, Graz, Austria; ⁶Erasmus MC-Sophia Children's Hospital, Department of General Paediatrics, Rotterdam, the Netherlands; ⁷Department of Pediatrics, Rigas Stradina Universitāte, Children Clinical University Hospital, Riga, Latvia; ⁸Translational Pediatrics and Infectious Diseases, Pediatrics Department, Hospital Clínico Universitario de Santiago, Santiago de Compostela, Spain; ⁹Pediatric Infectious Diseases and Immunology, Amalia Children's Hospital, Radboud University Medical Center, Nijmegen, the Netherlands; ¹⁰Paediatric Immunology, Infectious Diseases, and Allergy Department; Great North Children's Hospital, Newcastle upon Tyne, UK; Translational and Clinical Research Institute, Newcastle University, Newcastle upon Tyne, UK; ¹¹on behalf of

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Background In high-risk children (due to underlying illness or immunosuppressive therapy), fever is often the only sign of serious bacterial infection (SBI). Biomarkers commonly used in emergency departments (EDs) do not predict SBI well, therefore most high-risk children are admitted and treated with IV antibiotics, awaiting final microbiological results. We describe current management and aetiology across Europe.

Objectives 1. To describe the characteristics of high-risk paediatric patients presenting to A/E with febrile illness

2. To assess the current aetiology of febrile illness in the high-risk population

3. To assess current management and outcome of febrile illness in the high-risk paediatric population

Methods High-risk children, presenting with fever/suspected infection and requiring blood investigations, were prospectively recruited, upon informed consent, in the Personalised Risk assessment in Febrile illness to Optimise Real-life Management across the European Union (PERFORM) study across 16 European centres between June 2016 and June 2019. Demographic, presenting features, microbiological, treatment, and outcome data were collected. Patients were assigned final phenotype diagnoses as per PERFORM protocol.

Results 529 children were recruited of whom 56% had malignancies.

92.5% (n=490) had blood cultures taken with a positive yield of 16.1% (n=79), including 14 contaminants. 27.8% (n=146) had bacterial phenotypes, 22.4% (n=116) viral, and 31.7% (n=161) were unknown viral/bacterial. Only 12.4% (n=65) were definite bacterial and 9.70% (n=51) definite viral infections. In ED, only ill appearance was associated with bacterial infection (p<0.001); vital signs and neutropenia were not. 82% (n=432) had antimicrobials started on admission, and were treated for median 7 days (IQR 3–10 days).

Mortality was 1.7%, and 85.7% made full recovery, without difference between bacterial or viral phenotypes. Bacterial phenotype was associated with PICU admission (p=0.014).

Conclusions Fever remains a major challenge in high-risk children. Ill appearance was the only feature in ED associated with bacterial phenotypes. The low yield of microbiological diagnostics supports the urgent need for new biomarkers.

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Association of Paediatric Emergency Medicine

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PIMS -TS AN ARTFUL MASQUERADER – VARIATION IN THE INCIDENCE AND CHARACTERISTICS IN THE SECOND WAVE OF THE COVID-19 PANDEMIC

¹Caroline Ponmani, ²Chandu Wickramarachchi, ²Yvette Redpath, ²Lunik Sarder, ²Sai Win, ²Gaurav Baruah. ¹BHRUT; ²Barking Havering and Redbridge University Trust

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Background The overall risk of PIMS-TS in children in the UK is considered low. In recent weeks, however, the numbers of cases have increased substantially. There has been a clustering of cases in February 2020 in this DGHS with a multi-ethnic population. About 45,000 children present to PED in a typical year. The rise and fall of COVID-19 in the first wave mirrored PIMS -TS cases and a similar pattern was noted in the second wave although the incidence of PIMS -TS shows a marked increase.

Objectives The focus of this descriptive study was to look at the clinical characteristics of children presenting with PIMS -TS in the second wave of the pandemic to a district general hospital and to highlight the clustering of cases in 2021.

Methods Children confirmed to have PIMS-TS were identified, case notes, investigations and treatment were reviewed.

Results A cluster of 13 children were diagnosed with PIMS -TS from 17th of January to the 28th of February. One child was diagnosed to have Kawasaki disease.

6 children were diagnosed in the first two weeks of February 2021. The median age of patients was 6.2 years. In the first wave of the pandemic children of Afro Caribbean origin represented a significant proportion of children with PIMS-TS. In 2021, 4 children with PIMS- TS were Asian, 4 children were White and 5 were Afro Caribbean in origin. All children presented with fever of more than 3 days. 5 children presented with partial Kawasaki features, 9 presented with shock, 4 presented with gastrointestinal symptoms and rash, one with features suggestive of meningitis later diagnosed to have sigmoid sinus thrombosis. None of these children had co-morbidities. Maximum CRP ranged from 90 to 245. 9 children were transferred to PICU and all had good outcomes. Serology for COVID -19 antibodies was positive in 10 children and COVID -19 NPA -RT PCR was positive in 2.

Conclusions It is likely that this clustering of cases of PIMS-TS is specific to a certain geographical area. The ethnicity of the population of children with PIMS -TS shows a difference compared to the first wave of the pandemic. There was a high incidence of COVID -19 in December 2020 in adult ED, there was also a higher incidence of confirmed SARS-CoV-2 cases in children. PIMS -TS which is a dysregulated response to SARS-CoV-2 could be a late response to increased prevalence and infectivity of SARS-CoV-2 in the second wave. The

presentation of PIMS- TS is varied and heterogenous. A strategy of education and continuous updates with case based discussions and literature review was put in place. This was to inform frontline doctors and nurses in the trust and resulted in timely identification, treatment and referral of the children who presented with PIMS -TS. Good clinical examination, following APLS, NICE and RCPCH guidelines and discussion with a tertiary centres remained the cornerstones in the management of the children with PIMS-TS in ED.

British Academy of Childhood Disability

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EXAMINING THE IMPACT OF VIRTUAL CONSULTATIONS DURING THE COVID PANDEMIC ON CHILDREN WITH CEREBRAL PALSY USING THE CEREBRAL PALSY INTEGRATED PATHWAY (CPIP) DATA

¹Alison Sansome, ²Kuldeep Stohr, ¹Amanda Birchnall, ¹Rachel Martell, ¹Vivien Wong-Spracklen. ¹Cambridgeshire Community Services NHS Trust; ²Cambridge University Hospitals NHS Foundation Trust

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Background In the first lockdown period community services were quick to move to virtual assessments and this was seen as a huge success in the use of technology. It became clear that there was significantly above expected deterioration in function and ability in our children with Cerebral Palsy. Whilst there is a desire amongst some within the service to maintain this virtual approach, there is a question as to whether virtual assessment is in fact good enough for the long term care of these young people.

We have used the Cerebral Palsy Integrated Pathway (CPIP) UK for 3 years. This is an evidence based tool for hip surveillance and monitoring of contracture/deformity in the lower limbs of children with cerebral palsy. Children and young people are seen at regular intervals dependent on their age and severity of cerebral palsy (based on gross motor functional classification system GMFCS). Joint measurement is colour-coded in a traffic light system where green is 'no concern', amber suggests an 'area of concern which may require intervention' and red 'needs action or intervention'.

Objectives To examine the impact of Covid related operational changes (reduction in face-to-face services) on pre- and post-Covid measurements extracted from CPIP data.

Methods A retrospective study of 97 patients aged 3–20 years (mean=10.33) registered under our Trust CPIP UK Registry. Paired-sample t-tests or Wilcoxon Signed Rank tests were performed using SPSS Software. Statistical significance was indicated at 0.05.

Results Of the 97 patients, 54 were male. 43 children had hemiplegic cerebral palsy (20 left sided and 23 right sided), 32 were diplegic distribution, and 22 were quadriplegic. The GMFCS score of severity was also recorded: 42 Level I, 25 Level II, 8 Level III, 13 Level IV and 9 Level V.

The CPIP database pre- and post-lockdown measurements were compared. A significant difference was found between pre- and post-scores for Knee Popliteal Angle on the Right ($t=-2.42$, $p=0.02$). Where the mean score for 90 Children was pre 36.14 and post 39.24 degrees. A significant difference was also found between pre- and post-scores for Knee

Popliteal on the Left ($t=-2.78$, $p=0.01$). The mean score for 88 children was 36.23 degrees pre and 40.09 post.

Also significantly deteriorated was Ankle Dorsiflexion on the Right, ($t=2.79$, $p=0.01$), where 85 children showed a mean dorsiflexion to 9.6 degrees above neutral pre and 6.91 post. Ankle Dorsiflexion on the Left also significantly deteriorated (asymptotic sig=0.01). 88 children had a mean pre-value of 7.95 degrees above neutral and 5.47 post.

Therefore, hamstrings and gastrocnemius muscle groups showed significant deterioration during lockdown.

Of note, 4 children received interventions: 2 had intramuscular Botulinum Toxin injections, 2 had orthopaedic surgery. Children receiving interventions did not deteriorate.

Conclusions The CPIP database is an excellent resource for comparison studies in cerebral palsy. The children who received interventions seemed to be protected from deterioration. This study demonstrates the importance of face-to-face consultations and interventions in preventing deterioration in children with spastic cerebral palsy. Virtual medicine is inadequate for this patient group.

Quality Improvement and Patient Safety

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IMPLEMENTATION OF A NEONATAL DAILY REVIEW SHEET ON A POST-NATAL WARD

Rosaline Garr, Richard Scowcroft, Klara Vataha. St Helens and Knowsley Teaching Hospitals NHS Trust (Whiston Hospital)

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Background The paediatric team review babies daily on the busy post-natal ward located within the maternity unit. It was noted that there was lack of clarity in the daily documentation regarding neonates. Current documentation was in a folder comprised of multiple documents written on randomly assorted continuation sheets. There is a daily rotation of medical and midwifery staff and not a formal multidisciplinary team ward round which leads to chaotic environment regards patient plans and discharges and potentially creates excessive work for senior staff members as plans and follow up plans not clearly documented.

Objectives The objective of this study is to improve continuity of care and communication by implementation of a daily review sheet with aim to make documentation clear and provide guidance for daily review for junior doctors who frequently rotate.

Methods We created a daily review sheet to be used on the post natal ward for neonates on the medical ward round. We created a pre implementation and post implementation questionnaire to be filled out by members the medical team to compare any subjective improvement the daily review sheet has made. The questionnaire contained 7 questions regarding whether staff thought different aspects of documentation and communication was clear with a suggestions/comments section. A Likert scale with questions ranked from 1 – 5 with 1 equal to agree and 5 equal to disagree, therefore 3 equals neither agree or disagree.

Results 14 members of staff filled in our questionnaire before and 12 after (table 1).