

findings along with the literature would assist in making recommendations for this Paediatric app.

**Results** 27 papers were included in this review. Three papers were identified that studied apps specifically in aspects of Paediatrics. Overall, the studies showed that medical apps were an effective education tool by medical students during clinical placements. Survey results showed that medical apps were used by 43% of participants and 97% would like a Paediatric medical app to assist their learning during a Paediatric placement.

**Conclusions** Further long term studies are required to see the effects of medical apps in learning. More studies are also required to show how medical apps are beneficial for learning specifically during a Paediatric placement. A future Paediatric app should include concise information regarding common Paediatric conditions and have a simple design for quick use in practice.

### 60 EARLY ONSET NEONATAL SEPSIS: EVALUATION OF THE KAISER PERMANENTE SEPSIS CALCULATOR FOR USE AT A TERTIARY NEONATAL UNIT IN THE UK

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**Background** The incidence of Early Onset Neonatal Sepsis (EONS) in the UK is currently estimated at 0.9/1000 live births. NICE have published guidance (CG149) for treating infants based on antenatal risk factors and clinical indicators. In the UK, 13–20% of infants are treated for suspected EONS based on CG149. This represents a significant burden, impacting on family bonding, breastfeeding, physical trauma through repeated cannulation, as well as on hospital bed status and finances. Covid-19 has compounded the issue, implementing restricted visitation disrupting the family unit. The Kaiser Permanente Sepsis Tool (KPT) was developed to determine the likelihood of infection based on multivariate analysis, has been used in the USA to successfully and safely to reduce the numbers of babies being prophylactically treated for this rare condition. Following on for their success we have now evaluated KPT for use within a UK demographic at Medway Maritime Hospital.

#### Objectives

1. Can KPT reduce prophylactic IV antibiotic use in well babies, when compared to NICE guideline CG149
2. Can KPT achieve this safely within our local demographic

**Methods** Data was collected from 62 newborn infants treated at Medway Maritime Hospital, between November 2019 and January 2020. These patients received prophylactic IV antibiotics as per NICE CG149. Inclusion criteria;  $\geq 34$  weeks gestation and infants who were clinically well enough to be managed on the postnatal ward. The following data was obtained at the point of starting treatment; gestation, clinical examination, maternal peripartum temperature, rupture of membranes, maternal group B streptococcus. Subsequently peak CRP, blood and/or CSF culture results and duration of stay were recorded. Infants were classified into a risk category based on their peak CRP (Low  $< 5$ , Medium 5–10, High  $> 10$ ). These findings were then compared to treatment recommended by the KPT (local incidence of EONS 1/1000 live births).

**Results** 16 infants were classed as high risk (26%), 16 infants medium risk (27%) and 29 infants low risk (47%). The most common indication to treat was maternal pyrexia. Of infants screened, KPT recommended antibiotics for 2 infants (3%); both of these were low risk. 47% of infants would have been kept under enhanced observations, with antibiotics being started if clinical symptoms developed. All blood and CSF cultures were negative. Of the infants classified as high risk, 50% of these infants would have been allocated to routine care. In the infants classified as high risk, there were no differences in the risk factors for neonatal sepsis, when compared with other risk categories.

**Conclusions** KPT represents a lucrative opportunity to reduce antibiotic use in well infants on the postnatal ward. However in line with similar studies, our results have highlighted that, just as with NICE CG149, is not infallible and liable to occasionally missing an asymptomatic child. Clinical vigilance is of the utmost importance and implementation of KPT would be have to marry with robust systems of neonatal observation and workforce training. A more conservative approach to EONS will invariably be associated with risk and ultimately it will be up to individual units to agree on what is acceptable.

### 61 PATTERNS OF PRESENTATION OF SICKLE CELL DISEASE AT AHMED GASIM ESPECIAL IZED HOSPITAL FOR CHILDREN (2015–2016)

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**Background** Sickle cell disease is the commonest type of haemolytic anaemia in Sudan. It is commonly seen in those originating from western Sudan tribes, the affected children show various clinical presentations, laboratory findings, with varied complications and outcomes influenced by genetic, environmental and socioeconomic factors, which require a thorough assessment of patterns of presentations.

**Objectives** The aim of this study to determine the patterns of presentations of Sickle Cell Disease, in view of demographic data, clinical presentations, laboratory findings and the short outcome.

**Methods** This a prospective cross-sectional hospital based study, conducted in Ahmed Gasim Specialized Hospital for Children, (Khartoum North, Sudan) during the period from 1/11/2015 to 31/1/2016, covered all patients with Sickle cell disease, their ages were less than 18 years. Data collected by specifically designed questionnaires to fulfil the objectives of this study.

**Results** One hundred thirty eight patients were studied, aged between 9 months and 17 years with a mean age of 6.26 years ( $\pm 4.44$  SD). Nearly 93% of patients were belonging to western tribes of Sudan. The prevalence of sickle cell disease patients were 2.6% of total admission and 0.7% of the total number of patients seen in the Emergency Room in Ahmed Gasim Specialized Hospital for Children. Also anaemia due to Sickle Cell Disease comprises 43.9% of total anaemic patients. Seventy percent of patients were diagnosed during the first year of life. Painful crises were observed in 59%, haemolytic crises seen in 20.4%, sickle cell hepatopathy in 4.3%, cerebrovascular accidents seen 1.4%, sequestration crises in 0.7%. Ninety fifth percent of patients presented with fever, 71% presented with fatigability, pain reported in 69.6%, jaundice in

52% and limb swelling in 51.4%. Pallor indicative of anaemia is seen in all (100%) of patients, tachycardia seen in 91% and hepatomegaly detected in 63.8%. Growth failure observed in 51.45%. All study population had low haemoglobin, ranging from 2.9 - 9.5 gm/dl with a mean 7.01 gm/dl ( $\pm 1.1$  SD), Reticulocytosis observed in 18.8% and Leucocytosis in 85.5%. Ninety percent recovered from their acute episodes, (5%) were referred to other hospital, only three patients (2.2%) leaved against medical advice, two patients (1.4%) discharged home with complications, there were two deaths (1.4%).

**Conclusions** The study exemplifies different patterns of presentations in patients with Sickle cell disease with variable percentage. It is suggested to manage considering that patterns and applying the multi-disciplinary approach.

#### 64 MICROBIAL PATTERNS AND ANTIBIOTIC SUSCEPTIBILITY IN BLOOD CULTURE ISOLATES OF SEPTICEMIA SUSPECTED CHILDREN IN THE PEDIATRICS WARD OF A TERTIARY CARE HOSPITAL

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**Background** Septicemia is considered as the second most common cause of death in non-coronary intensive care units (ICU) and tenth overall cause of death in countries with high per capita income. Early detection and determination of antimicrobial susceptibility patterns have been shown to reduce the morbidity and mortality associated with bloodstream infections.

**Objectives** This study aims to determine microbial patterns and antibiotic susceptibility to alert clinicians to the emerging pathogens that may pose a threat to the community, especially in children.

**Methods** This retrospective cross-sectional study was conducted in the Department of Pathology, Holy Family Hospital, Rawalpindi, Pakistan, from July 2019 to December 2019. The culture was performed on blood and MacConkey agar. Microbes were identified under a microscope by observing their morphological characteristics after gram staining and applying biochemical tests. Antibiotic sensitivity test was carried out using standard aseptic methods. Bacterial isolates and their susceptibility patterns were represented using frequencies and percentage charts.

**Results** Out of 423 blood cultures, growth was recorded in 92 (21.75%) of the cultures with female to male ratio 2.1:1. The gram-positive bacteria accounted for 43.48% (n=40) whereas gram-negative bacteria covered the majority 54.36% (n=50). Among isolates, *Staphylococcus aureus* (42.39%) was the most common, followed by *Acinetobacter spp.* (17.39%) and *Pseudomonas aeruginosa* (14.13%). *Acinetobacter spp.* showed 0% susceptibility to amikacin and cefotaxime. All the isolates were 100% resistant to amoxicillin-clavulanic acid. *S. aureus* showed lower sensitivity for ceftazidime (0%), clindamycin (66.67%), ciprofloxacin (0%), clarithromycin (11.76%) and ceftriaxone (0%). Tigecycline showed 100% sensitivity for all isolates tested.

**Conclusions** Gram-negative bacteria form the majority of isolates in our set up with *Acinetobacter* most common species among them. The resistance against cephalosporins, penicillin, and fluoroquinolones shown by *Acinetobacter*, *Pseudomonas*,

*Salmonella*, and *Klebsiella* is of grave concern. Among Gram-positive bacteria, *S. aureus* has established resistance against multiple drugs. Limited and objective use of antibiotic therapy is a much-needed strategy under new guidelines.

#### 65 DENGUE FEVER AS A RARE CAUSE OF IMMUNE THROMBOCYTOPENIC PURPURA – A PAEDIATRIC CASE REPORT

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**Background** Immune thrombocytopenic purpura (ITP) typically presents with mucocutaneous bleeding and low platelet count. ITP is an autoimmune disorder characterised by auto-antibody mediated immunologic destruction of normal platelets. It can be either primary or secondary due to other medical disorders. Most children have a history of preceding viral infection and tends to be self-limiting in nature. However, a minority have persistent thrombocytopenia that leads to chronic ITP.

Thrombocytopenia is a common laboratory finding in dengue fever. However, platelet count usually normalises during the recovery phase of dengue infection. Persistent thrombocytopenia requires further investigations and surveillance to ensure recovery. Here, we report a case of ITP following dengue infection responsive to corticosteroid treatment.

**Objectives** We aim to highlight the importance of surveillance of platelet count in Dengue infection to ensure normalcy. We also hope to create awareness of possibility of ITP when thrombocytopenia persists.

**Methods** A previously healthy 4 years old boy was admitted to our institution for Dengue fever, which was confirmed by a positive Dengue NS-1 Antigen testing and Dengue Immunoglobulin M (IgM). He was treated with intravenous fluid and serial monitoring of full blood count. His platelet count remained low at  $1$  to  $8 \times 10^9/L$  and failed to normalise by second week of infection. There was no history of bleeding tendencies, neither was there history of recurrent infection, joint pain, appetite and weight loss, consumption of traditional medications as well as significant family history of bleeding disorders or malignancy. The child was pink and anicteric. Lymph nodes were not enlarged and hepatosplenomegaly not present. Peripheral blood films confirmed thrombocytopenia. No blasts cells seen. Connective tissue disease screening was unremarkable. He was given a dose of intravenous immunoglobulin (IVIg) therapy. He remained asymptomatic and was then followed up as outpatient.

**Results** He presented two weeks after with petechiae and bruises after a minor fall. Upon arrival, his vital signs were stable. He had petechiae rashes and bruise over left forearm. Persistence of thrombocytopenia prompted for bone marrow aspiration and trephine biopsy (BMAT). The procedure yielded normocellular marrow with increased megakaryocytes, peripheral isolated thrombocytopenia compatible with peripheral platelet destruction. He was then started on corticosteroid. He showed initial good response to therapy. At the time of writing, his counts were monitored on outpatient basis.

**Conclusions** This case report highlights the importance of trending platelet count and ensure that they normalised after recovery phase of dengue fever. Persistent thrombocytopenia warrants further investigations to rule out secondary cause.