#11: Post-malarial Hemolysis is Rare in Malawian Children with Cerebral Malaria

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**Background.** In severe malaria, artesunate decreases mortality compared to quinine. Artesunate’s introduction into clinical use in malaria-endemic areas revealed a unique adverse effect: severe hemolysis appearing several weeks after treatment completion. Though initial reports of post-artesunate hemolysis (PAH) were gathered from adult returning travelers, studies of African children revealed that PAH was less common in this semi-immune population. There are no published studies establishing the incidence and severity of PAH in severe malarial syndromes in African children, including cerebral malaria (CM). We determined the incidence and severity of post-artesunate hemolysis in Malawian children surviving CM by analyzing hospitalization and follow-up data from a long-standing study of CM pathogenesis.

**Methods.** Children aged 6 months to 14 years admitted to Queen Elizabeth Central Hospital (Blantyre, Malawi) with a clinical diagnosis of CM were enrolled in a retrospective cohort study. Children admitted before 2014 and treated with quinine (n=258) were compared to those admitted in 2014 and after and treated with artesunate (n=235). Hematocrit and parasite density were obtained at admission and every 6 hours until parasite clearance. The last hematocrit obtained during hospitalization was compared with the one-month post-hospitalization hematocrit value.

**Results.** The overall rate of a post-hospitalization decrease in hematocrit in children surviving CM was 53.3% (4.7% for quinine, 5.8% for artesunate. p value for difference= 0.582); no patients with a hematocrit decrease were symptomatic; none required transfusion. Of the children with a decrease in hematocrit at one month in hospitalization, 23.1% had evidence of a new malaria infection. When children treated with quinine and artesunate were combined, a higher hematocrit on admission, lower quantitative histidine rich protein 2 level, and splenomegaly were independently associated with a post-treatment decrease in hematocrit.

**Conclusions.** In African survivors of CM, post-treatment hemolysis is rare, mild and unassociated with the antimalarial treatment received.

#24: Neutropenic Enterocolitis in the Pediatric Patient with Hematological Cancer at Centro Medico Nacional 20 de Noviembre, from June 2019 to May 2020

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**Background.** Neutropenic enterocolitis is a life-threatening condition which occurs in patients presenting neutropenia (absolute neutrophil count <500 / mm3), where secondary to the use of chemotherapy there is an aggressive destruction of tumor cells, which alters the rapid replication phase, in which different types of epithelia are also involved, this is why they decrease their turnover rate, evolving into injury in the intestinal mucosa, especially at the level of the terminal ileum and cecum, although it can affect any part of the intestine. Clinically manifested by fever, pain, and abdominal distension; it is more frequently associated with hematologic cancer, although it can occur in other types of cancer. CT is the Gold Standard for diagnosis. Ultrasonography may also be useful, however, this diagnostic tool is operator dependant and is less sensitive at measuring small lesions. Treatment is usually sufficient, but surgical intervention may be necessary in patients with perforation or deterioration.

**Methods.** The incidence of Neutropenic Enterocolitis cases in the pediatric population was identified by means of a descriptive, cross-sectional and retrospective study. We included medical records of patients admitted with a diagnosis of leukemia. Data analysis was carried out by means of a non-probability sampling for convenience, creating the database in electronic system followed by the data analysis obtained by the JASP software version 0.13.1.0.

**Results.** We took into account a total of 1019 patients with leukemia, from which 95.58 % (n=974) were ALL (Acute Lymphoblastic Leukemia) and 4.41 % (n=45) AML (Acute Myeloblastic Leukemia); the Neutropenic Enterocolitis diagnostic, gave us 49 files, from which we eliminated 12 with a different diagnosis, obtaining a total sample of 37 clinical records. The most affected population was the group of between 10–17 years with an incidence of 51.35%, the most common type of hematologic cancer was ALL representing 86.4 % of the cases, from which 40.54 % were in the induction phase of treatment when they started with the clinical symptoms of neutropenic enterocolitis; fever, abdominal pain and diarrhea are the most common symptoms. The diagnosis was made based on clinical presentation, and radiology tests being abdominal ultrasound the most common diagnostic tool. The most efficacious treatment because there were no complications and there was no need for escalation was Piperacillin/Tazobactam, followed by Meropenem.

**Conclusions.** Neutropenic Enterocolitis was more frequently diagnosed in patients with ALL and in those who were receiving the induction phase of treatment; a total of 28 % presented with sepsis or septic shock. The antibiotic scheme Piperacillin/Tazobactam suffers several modifications unlike Ceftimeline/Metronidazole which had to be scaled to carbapenem and just 10.81 % of the patients had the Gold Standard diagnostic tool (Abdominal Computed Tomography).

#29: Analysis of Mortality Due to Infections in Pediatric Patients in the Oncology Unit of a Third Level Hospital in La Paz, Bolivia

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**Background.** In recent decades, advances in cancer treatment have made it possible to improve the prognosis of hemat-oncological patients, however, mortality is still high in developing countries. One of the most important causes of morbidity and mortality during the treatment of children with cancer is infectious complications, especially in the induction phase. The multiple interventions that are carried out during treating increase the risk of developing these infections, which can be more frequent if the recommended strategies to prevent them are not applied. The objective of this study was to investigate what were the causes of death in children with cancer at our institution.

**Methods.** The medical records of deceased patients were analyzed in the onco-hematology unit of the children’s Hospital ‘Dr. Ovidio Aliaga Uria’ in the city of La Paz, Bolivia. The causes of mortality, the stage of chemotherapy in which the death occurred, its relationship with infections and the microbiological identified during 2020 were classified.

**Results.** During 2020, 19 deaths were found in cancer patients, the mean age was 8.5 years and of which 52% were male. Regarding the diagnosis, there was a higher proportion of hematological diseases 68% and solid tumors 32%. Among the causes of death, 58% were due to their underlying pathology and 42% of the patients that were in palliative care or in relapse and 42% were due to infectious causes, of which 62% were in induction phase of chemotherapy. Among the 8 patients who died from infections, the following causes were found: 50% neutrophenic colitis, 25% bacteremia and 25% necrotizing fasciitis; in 7 (87.5%) patients the microorganism was isolated in blood culture, these were E. coli 43%, Klebsiella spp 43% and Bacillus spp 14%. Gram negative bacilli (GBN) represented 86% of the isolates and 50% were producers of extended spectrum beta-lactamases (ESBL).

**Conclusions.** Considering that infections are preventable and are among the most important causes of mortality in children with cancer in our hospital, it is essential that infection control teams are developed that apply evidence-based strategies to prevent these infections and thus achieve a reduction in morbidity and mortality, applying programs with training of human resources and equipment to reduce these deaths.

#32: Single Center Experience with the Use of Convalescent Plasma Transfusion (CPT) for COVID-19 + Patients in Argentina

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**Background.** COVID-19 pandemic challenged health sanitary systems worldwide. 1.65 million cases have been reported in Argentina with 43,635 deaths. CPT for COVID-19 has emerged as a possible and feasible treatment. Transfusion cardiovascular overload (TACO), acute lung injury (TRALI) and anaphylactic reactions (AR) have raised safety concerns; in the second period, after the policy was changed, NAAT was performed routinely as screening for all oncologic patients admitted to the hospital.

**Results.** Between July 1st to December 2nd, 2020, the first period, there was 3 positive results from 36 suspected COVID-19 patients among 181 total pediatric oncology patients. In the second period, we performed NAAT for all patients, none of them had signs and symptoms of COVID-19 and 4 of them came from boarding house.

**Conclusion.** Routine screening for COVID-19 should be considered as a policy for hospitalization of a pediatric oncology patient because of the high risk that asymptomatic COVID-19 patients can transmit the infection to other patient and to health care workers in the hospital.
weighing >70kg received 2 units. CPT was prescribed within 14 days of starting SARS-CoV-2 symptoms. All patients received dexamethasone and standard support measures. We used percentages and frequencies for reporting the results of this study. Categorical variables were compared with Chi2 and numeric Fisher/Mann Whitney. Time dependent survival variables were calculated with Kaplan Meier method. SPPS 20 software was used for data processing.

Results. The CPT recipients median age (IQR) was 47 years of age (range 43–59 years); 65.5% were; 12.5% had either hypertension or obesity, 3.1% chronic obstructive lung disease; 30% had diabetes. The median temperature at diagnosed was 39°C (IQR: 36.6°C–38.8°C). A total of 39 CPT units were infused in 32 patients. 25 patients (78%) received 1 unit, 6 patients (19%) received 2 units and 1 patient (3%) received 3 units (3%). Donor median (IQR), SARS-CoV-2 antibody titer was 1:400 (range 400–1600); median time (IQR) to transfusion was 1 day (range 1–4).

Coverage was 100%.

Outcomes. 29 patients (91%) survived and 3 (9%) died for COVID-19. Only 3 patients (8%) developed moderate/reversible side effects: allergic reaction (2 pts) and TRALI (1pt). At a median time of 100 days, the median survival was 85.0% (0.5) and the mortality rate was 19 % (0.6).

Conclusion. CPT was feasible to deliver and could be implemented in a less resourced country in a timely fashion. All our patients could afford plasma therapy. No severe adverse events were reported. Pediatric studies can be based on the results of this type of study. Research should focus now on a control case cohort study to determine efficacy of CPT.

#37: Description of Moderate-Severe Cases of COVID-19 in Pediatric Cancer at the Unidad Nacional de Oncología Pediátrica, Guatemala

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Introduction. Guatemala reported the first confirmed SARS-CoV-2 case on March 13th 2020. Up to now, more than 140,000 confirmed cases have been documented, with 8% of them being <20 years-old. The impact of COVID-19 in pediatric cancer is still unknown, even though pediatric oncological institutions did some initial recommendations, this new disease still represents a challenge in this population. The objective of the report is to describe the moderate-severe cases of COVID-19 in pediatric cancer during the first 8 months of the pandemic in the Unidad Nacional de Oncología Pediátrica (UNOP).

Methods. This is a descriptive, prospective report of pediatric cancer patients <20 years-old and SARS-CoV-2 infection confirmed by nasopharyngeal swab with PCR technique at UNOP from May to December 2020. The SARS-CoV-2 test was performed in all patients with symptoms of infection or as screening in patients who were admitted to UNOP regardless of symptoms. Information about sex, age, primary oncological diagnosis, confirmed confections and treatment received at time of COVID-19 was collected. Moderate illness was considered if the patient required supplemental oxygen and severe illness if admitted to Intensive Care Unit -ICU- secondary to COVID-19.

Results. Two hundred one patients with pediatric cancer with the SARS-CoV-2 infection were confirmed. Sixty four percent were male (n=128), median of age was 9 years old (IQR: 6-12 years). Primary oncological diagnosis (n=129), and other solid tumors 35% (n=72), 5% (n=10) of patients were in palliative care. In leukemia patients, 40% were receiving induction therapy (n=51), 25% consolidation (n=32), and maintenance (n=25). The most common initial symptom was fever in 32% (n=64) and 33% were asymptomatic (n=67). Twenty percent developed moderate disease (n=44) and 13% severe disease (n=26).

A total of 13 patients died during COVID-19 period (6%) and 7 of them died receiving active treatment (3%). The risk of developing moderate-severe disease was not higher in leukemia patients compared to patients with other tumors who were receiving chemotherapy (OR:0.77), but there might be a higher risk of death (OR:1.41). In patients with leukemia, the risk of developing moderate-severe disease was higher for patients receiving induction therapy compared with those in consolidation (OR:6.7) or maintenance (OR:3.04). Mortality risk seems to be higher in patients with leukemia during induction therapy (OR:1.94). Confirmed confections correlated with higher risk of severe illness (OR:1.95) and death during the COVID-19 period (OR:5.2).

Conclusions. The mortality due to COVID-19 in pediatric cancer is low and could be related to confections or intensive chemotherapy. Important limitation of our report is the lack of analysis of underlying clinical conditions in moderate-severe disease (neutropenia or other comorbidities), factors that could have an impact on our data analysis.

#38: Bacteremia Analysis of Three Hospitals in Hispaniola Island

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Background. In October 2018, the Hispaniola Project was initiated to build local expertise in infection care and prevention at three pediatric oncology units (POUs) in Haiti and the Dominican Republic. The objective of the report is the lack of analysis of underlying clinical conditions in moderate-severe disease (neutropenia or other comorbidities), factors that could have an impact on our data analysis.

Methods. We conducted prospective infection surveillance in all patients admitted to three POUs in Hispaniola Island. Blood culture methods followed standard national procedures. We used the 2018 US Centers for Disease Control National Healthcare Safety Network case definitions for primary laboratory-confirmed bloodstream infections (LCBI), and we categorized infections as healthcare-associated or present on admission (POA). We reviewed data collected from January 2019 to December 2020 and used descriptive statistics to report our results.

Results. Our review identified 66 LCBI with an overall rate of 3.52 infections per 1000 patient-days. Of these, 40 (61%) were healthcare-associated, and 26 POA. The majority (41, 62%) of patients were undergoing chemotherapy at the time of the infection, with induction being the most common phase (23). The most common oncological diagnosis was acute lymphoblastic leukemia (43%), followed by solid tumor (12, 18%). Thirty-five (80%) of the infections met the LCBI-1 criteria, with the other 13 categorized as LCBI-2. Of the 53 LCBI-1, 17 (31%) were considered related to mucosal barrier injury (MBI-LCBI 1 definition). The most commonly identified organisms were Klebsiella spp (13, 19%), and coagulase-negative Staphylococcus (13, 19%). Antibiotic resistance was observed in many of the identified pathogens, with nearly half (25, 44%) of the 57 bacterial isolates having any resistance and a quarter (14, 25%) with resistance to multiple classes, including cephalosporins, fluoroquinolones, and carbapenems. Eleven (16%) patients were admitted to the Intensive Care Unit as a result of the LCBI. Thirty-three deaths were recorded among the patients with LCBI, with 6 (46%) associated with the HAI and 7 (54%) related to disease progression.

Conclusions. Our findings demonstrate that resistant pathogens were frequent among the LCBI isolates. Our preliminary results are guiding clinical management to be vigilant in our care of patients at high risk for bacteremia and poor clinical response among the LCBI isolates. Our preliminary results are guiding clinical management to be vigilant in our care of patients at high risk for bacteremia and poor clinical response.

#42: COVID-19 in Pediatric Hemato-Oncology Patients from Three Hospitals in China

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Background. In late 2019, a novel coronavirus, SARS-CoV-2, was reported in China, which rapidly spread across the globe. The WHO declared a pandemic of coronavirus disease (COVID-19) in early 2020. In March, both the Dominican Republic and Haiti reported their first cases. The three pediatric oncology units (POUs) that make up the St. Jude Global Infectious Diseases Hispaniola Project began to see COVID-19 among patients in Santo Domingo in March and in both Santiago and Port-au-Prince in June. We report the experience of managing pediatric hemato-oncology patients with COVID-19 in these three POUs.

Methods. We added COVID-19 data to our ongoing healthcare-associated infection surveillance in the POUs of the Hispaniola Project. The population studied included all patients tested for SARS-CoV-2 by PCR at one of our three POUs. Patient data was recorded on a basic line listing. Cases were categorized using a published clinical symptom severity scale and case definition criteria from the WHO and the US Centers for Disease Control and Prevention (CDC).

Results. In total, 31 pediatric oncology patients met either the WHO and/or CDC case definition for COVID-19. The average age was 8 years (range: 5 months to 15 years). Just over half (17, 55%) of cases were female. The most common oncological diagnosis was acute lymphoblastic leukemia in 17 of the cases, followed by acute myeloid leukemia (5). Five (16%) patients were in the consolidation phase, 7 (23%) in induction, and 11 (35%) in maintenance. Using the symptom severity scale, 13 (32%) cases were asymptomatic; symptoms were considered mild in 14 (45%) cases, moderate in 3 (10%), severe in 0 (0%), and critical in 1 (3%). Three deaths were attributed to COVID-19. Eighteen cases met the WHO criteria, 13 (72%)

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