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Optimization of school reintegration for pediatric oncology patients and their peers

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percent of patients had high triglycerides (grade 1) and twelve percent grade 2. Fifty-two percent had either transaminase affected. None of the patients with abnormal liver function tests required therapeutic interventions or interruption of therapy.

Conclusion: As the first step of project, we completed our **baseline assessment** and will **do** the following modifications to our monitoring plan: if the baseline panel including CBC with differential, CMP and lipid profile is normal, we will **not** re-test chemistries, renal function or bilirubin. Every three months will obtain: CBC with differential, transaminases, cholesterol and triglycerides. We will obtain an official nutritional consult for high cholesterol and/or triglycerides and will consult gastroenterology for two consecutive grade 2 transaminitis. We will proceed with this monitoring plan for 1 year and **study** the data at the end of twelve months.

Poster # 178|||INFLUENZA VACCINATION IN ONCOLOGY AND SICKLE CELL DISEASE AFTER AN INPATIENT ADMISSION ORDER SET

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Background: Influenza causes greater morbidity in pediatric oncology and sickle cell disease (SCD) patients versus the general pediatric population and can lead to delays in cancer-directed therapy. Prior studies have improved vaccine uptake through outpatient interventions, but no studies have looked at inpatient interventions.

Objectives: Determine influenza vaccination rates of pediatric oncology and SCD patients in a low- vaccination state (Georgia, USA) and determine the efficacy of an inpatient opt-out admission order set for improving influenza vaccination.

Design/Method: A retrospective chart review was conducted of all pediatric oncology and SCD patients treated at Children's Healthcare of Atlanta (CHOA) during the last three influenza seasons (September 1–April 30; 2017-2018, 2018-2019, 2019-2020). For each season, eligible oncology patients were receiving or within 6 months of completion of cancer therapy at the start of each season, while eligible SCD patients were admitted at least once annually. A system-wide opt-out inpatient admission order set was implemented prior to the 2019-2020 influenza season. Vaccination status of patients that were admitted during an influenza season was collected and compared pre- and post-intervention.

Results: Approximately 2100 oncology and 750 SCD patients were eligible per influenza season. US general population influenza rates for 2017-2018, 2018-2019, 2019-2020 were 57.9%, 62.6%, 63.8% respectively; Georgia rates were 51.3%, 55.5%, 55.6% respectively. Oncology patients had lower vaccination uptake than the US population for all three seasons (49.3%, 56.5%, 58.4%, all $p<0.001$) but similar vaccination uptake to Georgia, except for 2019-2020 ($p=0.01$). SCD patients had similar to higher uptake compared to the nation for all seasons (63.7%, $p<0.001$; 65.5%, $p=0.08$; 66.8%, $p=0.08$) but higher uptake compared to Georgia (all $p<0.001$). Leukemia/lymphoma patients had higher influenza vaccination uptake compared to solid tumor and brain tumor patients for all three seasons. Among the inpatient oncology and SCD cohorts, there was no significant change in vaccination uptake before and after the inpatient intervention (leukemia/lymphoma $p=0.19$; solid tumor $p=0.42$; brain tumor $p=0.77$; SCD $p=0.33$). Concurrent chemotherapy and prior influenza vaccination correlated strongly with vaccine uptake for all three oncology groups (all $p<0.01$). Prior influenza vaccination was strongly correlated with vaccine uptake in inpatient SCD patients ($p<0.001$), though history of acute chest syndrome, splenectomy, chronic transfusion, and prior pneumococcal vaccination were not.

Conclusion: Pediatric oncology and SCD populations have similar to greater vaccination uptake compared to Georgia. There was no improvement in influenza vaccine uptake from the inpatient order set, suggesting that future interventions should focus on outpatient.

Poster # 179|||OPTIMIZATION OF SCHOOL REINTEGRATION FOR PEDIATRIC ONCOLOGY PATIENTS AND THEIR PEERS

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Background: Favorable survival rates in pediatric oncology allow the opportunity for patients to return to school, during or after treatment. This can be a significant challenge, exposing vulnerability to peer rejection. Successful school reintegration for childhood cancer patients and survivors is integral to their academic advancement as well as achievement of normal psychosocial milestones. School reentry assistance is provided at institutions around the United States, but that assistance is significantly varied without any guidelines for standardization.

Objectives: This double-arm descriptive study, aimed to establish a framework from which to optimize a school reintegration intervention for both patients and their classroom peers.

Design/Method: This study utilized age appropriate surveys to evaluate the knowledge and concerns of 3rd-8th grade students in Michigan regarding friends with cancer. The study also utilized age appropriate surveys to evaluate input from patients at a Michigan academic pediatric oncology practice regarding return to school during or after cancer treatment.

Results: The majority of 3rd-8th grade students correctly answered questions related to etiology, prognosis, side effects, and treatment of cancer. Respondents in 3rd-5th grade were significantly more likely than 6th-8th graders to endorse that cancer is contagious ($P = 0.0036$). Fewer students who had a friend with cancer were worried that their friend might die, compared to those who did not have a friend with cancer [3rd-5th graders ($P = 0.0002$) and 6th-8th graders ($P = < 0.0001$)]. A common theme from patients was a desire to be given extra time for some assignments, though discreetly such that they do not feel singled out from their peers.

Conclusion: This study suggests that peer intervention should focus less on facts about cancer and more on positive childhood cancer outcomes, as well as how to be supportive of a peer with cancer who is returning to school. Additionally, personalized interventions and assistance for patients should strive to reduce stigma and differentiation from other students. Programs that do not already offer academic assistance, support groups, and peer education should consider adding these elements for successful return to school.

Poster # 180|||PEER PATIENT ADVOCATES DEVELOPMENT OF EDUCATIONAL MATERIAL FOR ADOLOSCENT SICKLE CELL PATIENTS

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Background: Sickle cell disease, caused by a genetic mutation in the hemoglobin, leads to chronic anemia, vaso-occlusive pain episodes, multisystem organ damage, and a shortened lifespan. Adolescent and emerging adult (AEA) sickle cell patients consistently report feeling alone without support and also lack disease-specific knowledge (Sobota et al., 2014). Peer patient advocates (PPAs) have the same chronic illness as the patients and have become a developing resource in the healthcare system. Traditionally, PPAs assist patients to navigate through various medical and life events (MacLellan, 2017).
Objectives: The development of educational material by a peer patient advocate.
Design/Method: The PPA developed a booklet with 10 educational modules based on health information gathered from Got Transition, National Institutes of Health, and American Society of Hematology. The educational material was used by twelve patients ranging in age from 14-21in a group healthcare program. To assess the value of the educational material, each participant was called 1-7 days prior to the next group meeting to inquire about what they retained from the previous meeting and their experience with and use of the educational material. Each interview was then audio-recorded and transcribed into a text file that could be used for feedback analysis.
Results: The participants described the booklet as useful, easy to understand, and beneficial to their learning. Having a peer patient advocate as part of the team that creates the education material can increase pertinent, useable, and relatable information for sickle cell adolescent patients. The team learned that while the participants enjoyed the booklet, the size of the booklet needed to be adjusted to accommodate ease of transport between sessions. The team also implemented a procedure to ask participants about knowledge retention in between session and incorporated a literacy tool to ensure that the material was age appropriate and user friendly for the participants.
Conclusion: A peer advocate, through their own personal patient experience and basic medical knowledge, can streamline information to patients. The PPA is more familiar with living with a chronic disease than health care providers that are living without the disease. In conclusion, a peer patient advocate can guide patient education material development and can ensure that the content is more pertinent and useable for adolescents and young adults with sickle cell disease. Including a peer patient advocate to develop patient education development for other chronic diseases may be valuable for AEAs with other chronic health conditions.
MacLellan, Harm Reduction, 2017
Sobota, Pediatr Hem/Oncol, 2014

Poster # 181|||ZUMA-4 PHASE 1 LONG-TERM RESULTS: KTE-X19 CAR T-CELL THERAPY IN CHILDREN/ADOLESCENTS WITH R/R B-ALL

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Background: We present long-term Phase 1 results of ZUMA-4, a study of KTE-X19 autologous anti-CD19 CAR T-cell therapy in pediatric/adolescent patients with relapsed/refractory B-cell acute lymphoblastic leukemia (R/R B-ALL).
Objectives: Evaluate long-term safety and efficacy of KTE-X19 in pediatric/adolescent R/R B-ALL.
Design/Method: Patients (aged 2-21 years) with R/R B-ALL (Philadelphia chromosome-positive allowed) and >5% bone marrow blasts received 2×10^6 or 1×10^6 CAR T cells/kg following conditioning chemotherapy. The primary endpoint was incidence of dose-limiting toxicities (DLTs). KTE-X19–formulation was optimized in a second 1×10^6-dose group using a lower infusion volume (40-mL vs 68-mL).
Results: As of 9/9/2020, median follow-up was 36.1 months (range, 24.0-53.9), with 24 patients (median age, 14 years [range, 3-20]) of 31 enrolled receiving KTE-X19. Median time from leukapheresis to KTE-X19 product release was 14 days. Four patients received 2×10^6 cells/kg, with no DLTs in evaluable patients (n=3). Additionally, the 1×10^6 cells/kg dose level was explored (68-mL, n=11; 40-mL, n=9). Overall, Grade ≥3 adverse events occurred in 100% of patients, most commonly hypotension (50%) and anemia (42%). Rates of Grade ≥3 neurologic events/cytokine release syndrome were 25%/75% (2×10^6), 27%/27% (1×10^6 [68-mL]), and 11%/22% (1×10^6 [40-mL]). All 4 Grade 5 events (B-ALL, n=2; disseminated mucormycosis, n=1; Escherichia sepsis, n=1) were considered unrelated to KTE-X19. Overall complete remission (CR) rates (CR + CR with incomplete hematologic recovery) were 75%, 64%, and 67% in the 2×10^6, 1×10^6 (68-mL), and 1×10^6 (40-mL) groups, respectively. Of responding patients, 100% had undetectable minimal residual disease (MRD). Sixteen patients (2×10^6, n=2; 1×10^6 [68-mL], n=8; 1×10^6 [40-mL], n=6) underwent subsequent