periences with COVID-19 have been hugely variable across the globe, reflecting ethnic, governmental, cultural, economic and healthcare differences. This thematic analysis was performed to identify scientific and clinical literature relating to the impact of COVID-19 on children with cancer and treatment. METHODS: The NHS Evidence portal was used to conduct a healthcare database advanced literature search. Duplicates were removed. Remaining results were screened using clear inclusion and exclusion criteria. RESULTS: 172 results were identified and data extracted. Literature was identified from all 5 continents, with lower and middle income countries well represented. Key themes identified included: 1: Impact on patients already diagnosed, including decreased treatment regimens, impact on outpatient clinics, COVID susceptibility and travel restrictions; 2: Delays in presentation and diagnosis, and national screening programs; 3: The impact of COVID on healthcare professionals; 4: Impact on current and future research; 5: Consequence of global economic crisis on childhood cancer care; 6: Impact on long-term survivorship, late effects and surveillance monitoring. CONCLUSION: COVID-19 has had a profound effect on health care, and the literature reflects the extent to which communities involved in childhood cancer care have worked together to minimise the impact. It is inevitable that there have been consequences of the pandemic on the treatment of existing patients, and the diagnosis of new ones, but evidence suggest these effects in the short term are minimal. The greatest concerns are for immediate and short-term research conduct.

COVD-03. IMPACT OF COVID-19 ON THERAPY PROVISION FOR CHILDREN WITH CNS TUMOURS

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INTRODUCTION: The COVID-19 pandemic has led to widespread change in the delivery of rehabilitation. The Teenage Cancer Trust reported that 69% of young people with cancer saw their physiotherapist less than usual during the pandemic raising concerns about physiotherapy input. METHODS: Retrospective analysis of all children's therapy input managed under the Neuro Oncology Rehabilitation Team (NORT) between 1st April and 30th July 2020. Descriptive analysis of change to physiotherapy provision during this time period by Tertiary and local community services. RESULTS: 49 children were managed under the NORT Therapy Team during this timeframe. 9 children were newly diagnosed with CNS tumours. There was no impact on inpatient therapy provision, 3 had delayed local therapy provision on discharge requiring increased virtual input by the Tertiary centre. 40 children were outpatients managed under the NORT therapy team. 16 children were also receiving regular local physiotherapy input prior to the COVID-19 pandemic. 13 of these children subsequently had their local physiotherapy input suspended during this time period, 8 children were offered virtual input as an alternative by the Tertiary centre, 2 children received increased face to face appointments at the Tertiary centre. 14 of the 24 children managed solely under the Tertiary NORT Therapy Team changed to virtual therapy reviews. DISCUSSION: There is a clear change in therapy provision as a result of the COVID-19 pandemic. Future research should consider the effectiveness of neurorehabilitation conducted virtually and the impact on physical function of reduced local therapy provision in children with CNS tumours.

COVD-04. CHARACTERISTICS OF SARS-COV-2 IN 64 CHILDREN WITH CNS TUMORS: A REPORT FROM THE SIOP/ST. JUDE CHILDREN'S RESEARCH HOSPITAL (SJCRH) GLOBAL COVID-19 CHILDHOOD CANCER REGISTRY

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BACKGROUND: The GCCCR is a collaboration between SIOP and SJCRH to describe the natural history of SARS-CoV-2 in children with cancer across the world. METHODS: The GCCCR is a deidentified registry of patients <19 years of age with cancer or recipients of a hematopoietic stem cell transplant and laboratory-confirmed SARS-CoV-2 infection. Demographic data, cancer diagnosis, cancer-directed therapy, and clinical characteristics of SARS-CoV-2 infection were collected. Outcomes were collected at 30-days and 60-days post infection. RESULTS: As of August 10th 2020, the GCCCR included 730 cases from 35 countries, including 64 children with CNS tumors (8.8%) from 17 countries. The most frequent diagnoses were embryonal tumors (31.2%) and low-grade glioma (17.2%). Thirty-nine (60.9%) children were asymptomatic from infection, while 19 (29.7%) patients required hospital admission and 2 (6.3%) transferred to the intensive care unit. There was a significant association between infection severity and ANC <500 (p=0.04). At the time of infection, 44 (68.8%) patients were undergoing cancer-directed therapy. Thirty-two cases have follow-up data. No modification in cancer-directed therapy occurred in 11 (34.4%) patients, while chemotherapy was modified in 6 (18.8%), radiotherapy delayed in 2 (6.3%), and surgery postponed in 1 (3.1%). No patients died from SARS-CoV-2 infection, although 2 died from non-COVID-19 related causes. CONCLUSION: The frequency and severity of COVID infection among children with CNS tumors appears to be proportionally lower compared to other children with cancer. Although this is the largest cohort of patients reported to date, additional insight is needed, including the effects of treatment modifications on outcomes.

DRUG DELIVERY/PHARMACOKINETICS

DDEL-01. ENHANCING DRUG DELIVERY WITH MRGFUS FOR DIFFUSE INTRINSIC PONTINE GLIOMA MODEL

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Diffuse intrinsic pontine glioma (DIPG) is a surgically unresectable and devasting tumor in children. To date, there have been no effective chemotherapeutics despite a myriad of clinical trials. The intact blood-brain barrier (BBB) in part is responsible for the limited clinical response to chemotherapy. MRI guided focused ultrasound (MRgFUS) is a promising non-invasive tissue ablative method for CNS tumors. Moreover, MRgFUS allows for the temporary disruption of BBB. Our first objective was to determine the feasibility and safety of temporary BBB disruption within the brainstem using MRgFUS following intravenous (IV) administration of microbubbles in vivo. Our second objective was to select effective chemotherapeutics against DIPG cell lines, and to examine their therapeutic effects with MRgFUS in a mouse model of DIPG which exhibits an intact BBB. The non-invasive opening of the BBB was determined in the brainstem of normal rodents using physiological monitoring and histological analysis. Doxorubicin was selected from a drug screen consisting of conventional chemotherapeutics using SU-DIPG4 and SU-DIPG17 cell lines. We established SU-DIPG17 xenografts which demonstrated diffusely infiltrative tumor growth similar to human DIPG. By LC-MS/MS analysis, MRgFUS led to a 4-fold increase in doxorubicin concentrations within the brainstem tumors following IV administration when compared to IV administration alone, We demonstrated feasibility and safety of MRgFUS in the rodent brainstem and have shown that MRgFUS increases doxorubicin uptake in the brainstem of a rodent model of DIPG. These preclinical data will be helpful in designing clinical trials of BBB disruption using MRgFUS for DIPG in children.

DDEL-02. DECREASED TOXICITY OF CONVENTIONAL DOSE CHEMOTHERAPY UTILIZING BODY WEIGHT INSTEAD OF BODY SURFACE AREA FOR DOSING IN YOUNG CHILDREN <6 YEARS OLD ENROLLED ON THE "HEAD START" 4 CLINICAL TRIAL

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Metabolism of drugs in infants and young children is significantly different from older individuals due to differences in distribution, protein-binding capacity, hepatic metabolism and renal excretion. To be consistent with Children's Oncology Group (COG) guidelines, body surface area (BSA) was used to dose chemotherapeutics in children >3 years old enrolled on "Head Start" 4 clinical trial (HS 4). Four of 30 patients enrolled on HS 4 developed sinusoidal obstruction syndrome (SOS) while receiving induction chemotherapy with cisplatin, etoposide, vincristine, cyclophosphamide and high-dose methotrexate using BSA for dosing (mg/m^2). Patients #1 and #2 were both 2-years old at diagnosis, received and tolerated the first two cycles with mg/kg dosing uneventfully, then turned 3-years old and received cycle #3 with mg/m^2 dosing as per protocol guidelines, and developed SOS. Patient #3 was 3-years old at diagnosis, received induction chemotherapy with mg/m2 dosing, and developed SOS during the very first cycle. Patient #4