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MRI showed downward displacement of the cerebellar structures at the level of the foramen magnum, resembling Chiari malformation. However, due to the atypical presentation, spinal MRI was performed and revealed a presacral mass extending into the spinal canal at the S2–S5 level, with features suggestive of neuroblastoma. The diagnosis was confirmed by biopsy. Although neuroblastoma-associated OMS is classified as low-risk, the patient had a non-resectable L2 tumor and unknown MYCN status. She was started on tumor-directed chemotherapy with high-dose dexamethasone in line with OMS treatment protocols.
Results: The patient showed a good response to chemotherapy. After the third cycle, imaging revealed no detectable tumor, and OMS symptoms gradually resolved. One year after completing treatment, follow-up PET-CT showed only residual fibrotic changes with no signs of recurrence.
Conclusions: This case highlights the importance of considering malignancies in the differential diagnosis of unexplained neurological symptoms in children. A multidisciplinary approach is essential for timely diagnosis, effective treatment, and favorable long-term.

PO291 / #952 | *AS05 - SIOP Scientific Program / AS05e. Neuroblastoma*

Autologous Stem Cell Transplantation in High-Risk Neuroblastoma: A 20-Year Single-Center Experience From the National Cancer Institute of Ukraine

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Background and Aims: Neuroblastoma (NB) is the most common extracranial pediatric solid tumor. Standard treatment of high-risk NB (HR-NB) includes induction chemotherapy followed by HDCT with tandem auto-SCT and subsequent differentiation therapy, anti-GD2 antibody immunotherapy and mIBG therapy if indicated. As immunotherapy is unavailable in Ukraine, our analysis focuses on clinical features, treatment, and outcomes of HR-NB, with an emphasis on auto-SCT. Notably, tandem transplantation, as a part of HR-NB treatment, was introduced in our center in 2012.
Methods: We evaluated medical records of patients diagnosed with HR-NB, treated with either HDCT/auto-SCT or tandem HDCT/auto-SCT between 2004-2024 (N = 131). Clinical data at diagnosis, at and after progression/relapse were assessed. Objective response was evaluated according to INRC. Overall survival (OS) and progression-free survival (PFS) were estimated using Kaplan-Meier analysis.
Results: Before the russian invasion, our center performed 10–14 transplants per year; since the war began, this number has dropped to 1–3 annually. The median age was 4.3 years (range: 0.5–14). Metastatic disease was present in 99 patients (76%) with involvement of bone marrow (66, 50%), bones (43, 33%), lungs (9, 9.1%) and liver (7, 7.1%). Five-year OS and PFS were significantly lower in patients with two or more metastatic sites—36.9% and 29.2%, respectively. BuMel was the most common first HDCT regimen (114 cases, 85.7%), and topotecan-based regimen was the most common in second HDCT (34 cases, 25%). Survival analysis showed a 5-year OS of 48% and PFS of 44%. Tandem auto-SCT was performed in 44 patients (33.5%). Among those who received tandem auto-SCT, 5-year OS and PFS were 47.2% and 42.8%, respectively, without statistical significance.
Conclusions: Tandem autoSCT is a safe treatment modality and its efficacy is to be determined with further analysis of our database. Unavailability of complex treatment could be a major factor influencing outcomes of our cohort, therefore international collaboration for treatment optimization is needed.

PO292 / #1384 | *AS05 - SIOP Scientific Program / AS05e. Neuroblastoma*

Neuroblastoma Mibg Therapy Program at Kfshrc

Diana Bushnak
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Background and Aims: •The emergence of chemotherapy-resistant tumor cells is the major obstacle to improving initial tumor response and to curing High-Risk neuroblastoma •MIBG labeled with iodine-131 (131I) has demonstrated activity for targeted therapy of neuroblastoma, both in relapsed and newly diagnosed patients • As a single-agent in a Phase 1 dose-escalation study, 131I-MIBG showed a response rate of 37% in children with relapsed neuroblastoma and dose-limiting hematologic toxicity was circumvented with ASCR. •A Phase 2 study showed a 36% response rate and another 34% of patients had stable disease after MIBG therapy
Methods: Prior 131I-MIBG therapy ØAge (> = 2) ØDiagnosis (refractory or relapsed high-risk NB) ØMIBG uptake (> = one site, taken within 8 weeks) ØEligible if they had a response or stable disease.
Results: •Total Enrolled: 9 patients •3 received one cycle: Progressed after MIBG; 2 died and one is on salvage chemo •3 received one cycle: Stable disease, slight improvement, awaiting a second MIBG •3 received 2 cycles: •One 4 years off therapy with stable disease •One 6 months off therapy with stable and minimally improved disease •One died of progressive disease •Awaiting: 3 patients
Conclusions: •MIBG I 131 may be considered in the management of relapsed Neuroblastoma •Data are encouraging and continue to emerge re; use of MIBG I 131 as an upfront modality in the management of high-risk Neuroblastoma. •Proper preparation of patient, family and healthcare providers is the key of success of the MIBG treatment.

PO293 / #1083 | *AS05 - SIOP Scientific Program / AS05e. Neuroblastoma*

Retrospective Evaluation of Initial Presenting Symptoms and Diagnostic Processes in Patients Diagnosed With Neuroblastoma

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Background and Aims: To analyze the initial presenting symptoms, diagnostic timelines, and factors influencing the diagnostic process in neuroblastoma patients.
Methods: The medical records of 205 patients diagnosed with neuroblastoma between 1987 and 2024 were reviewed.A total of 189 patients with sufficient clinical data were included in the analysis. The initial symptoms at presentation and clinical and epidemiological characteristics were evaluated.
Results: The male-to-female ratio:1.7, and the median age at diagnosis was 26 months. The most common presenting symptoms were general complaints such as fatigue, loss of appetite, and muscle pain (33%), followed by fever (30.9%) and abdominal pain (21.8%). The median time to diagnosis was 27 days, while the median time from symptom onset to first medical consultation was 15 days. Patients presenting with weight loss, fatigue, limb pain, and inability to walk sought medical consultation significantly earlier ($p = 0.016$, $p = 0.012$, $p = 0.027$, $p = 0.049$, respectively).A positive correlation was found between age at diagnosis and time from symptom onset to first consultation ($p = 0.003$). Other factors influencing time from symptom onset to consultation included maternal education level ($p = 0.012$), paternal education level ($p = 0.023$), and living in an urban area ($p = 0.013$). The majority of patients (73%, n = 139) first consulted a pediatrician. The median number of physicians consulted before diagnosis was 2.5. Patients whose first consultation was with a family physician or a surgical specialty had a longer time from initial consultation to diagnosis ($p = 0.04$). Factors associated with a shorter time from symptom onset to diagnosis included higher parental education levels (both mother and father with a university degree, $p = 0.027$, $p = 0.02$), initial consultation with a pediatrician ($p = 0.017$), and the presence of a palpable abdominal mass at presentation ($p = 0.019$). Patients presenting with weight loss and limb pain had a significantly longer time to diagnosis ($p = 0.013$, $p = 0.041$). No significant association was found between age, gender, presence of metastases, or other evaluated symptoms and time to diagnosis.
Conclusions: Identifying the initial symptoms and factors affecting the diagnostic process, along with increasing awareness, should help reduce the time from symptom onset to consultation and from symptom onset to diagnosis.

PO294 / #1409 | *AS05 - SIOP Scientific Program / AS05e. Neuroblastoma*

The Effects of Arginine Methyl Transferase Inhibitor-1 and Cisplatin in Neuroblastom Cells

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Background and Aims: Neuroblastoma is the most common embryonal extracranial solid tumor of the sympathetic nervous system in childhood with very heterogeneous biological, morphological, genetic and clinical features. In advanced stages of cancer, survival rates do not exceed 40-50%. Cisplatin (CDDP) is the main chemotherapeutic agent used in the treatment of neuroblastoma. Protein arginine methyltransferase 5 (PRMT5) is an enzyme that regulates various cellular processes, including signal transduction, DNA repair damage, cell proliferation and other biological processes. Arginine methyltransferase inhibitor 1 (AMI-1) is a small molecule inhibitor of PRMTs. However, whether AMI-1, a selective PRMT inhibitor, has antiproliferative effects on PRMT5 gene and protein expressions when administered alone or in combination with CDDP in neuroblastoma has not been determined to date.
Methods: In this study, the potential antiproliferative effect of AMI-1 administered alone and in combination with CDDP in vitro in human-derived NMYC-expressing KELLY and non-HS-SY5Y neuroblastoma cells was examined by cell viability, apoptosis analysis, qRT-PCR and Western blot analysis of PRMT5 at the gene and proetin level, and cell cycle analysis.
Results: The potential anti-proliferative effect of AMI-1 in MYCN overexpressing KELLY and non-expressing SH-SY5Y neuroblastoma cells was statistically significant ($p < 0.001$). The combination of AMI-1 and CDDP was found to induce apoptosis by decreasing cell viability in neuroblastoma cell lines and to act on the cell cycle.
Conclusions: PRMT inhibitors show potential for the treatment of neuroblastoma. The combination of PRMT inhibitors and chemotherapeutic agents such as CDDP may be evaluated to reduce treatment resistance and increase treatment efficacy. Further studies in in vivo tumor models are needed to better understand the efficacy and safety of AMI-1 and cisplatin and similar chemotherapeutic agent combinations.

PO295 / #519 | *AS05 - SIOP Scientific Program / AS05e. Neuroblastoma*

How to Recognize Hypothalamic Dysfunction in Children With (Ganglio)Neuroblastoma Or Ganglioneuroma?

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Background and Aims: Children presenting with (ganglio)neuroblastoma or ganglioneuroma may have an underlying condition, also known as the Rapid-onset Obesity with Hypothalamic dysfunction, Hypoventilation and Autonomic Dysregulation (ROHHAD) syndrome. Children with ROHHAD-NET syndrome suffer from hypothalamic dysfunction leading to rapid onset obesity, pituitary dysfunction and autonomic dysregulation. Recognition of hypothalamic dysfunction in children with a (ganglio)neuroblastoma or ganglioneuroma is difficult due to its rareness and diversity of symptoms. To aid in its recognition, diagnostic criteria for the hypothalamic syndrome (van Santen et al., 2023) were developed. However, symptoms of autonomic dysregulation typically seen in children with ROHHAD syndrome are lacking in these criteria. To improve recognition of hypothalamic dysfunction in

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