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Oncologic emergencies in children

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Over 80% of children with cancer can be cured or be long term survivals. However, late, long term and acute complications or sequelae; as result of the disease and/or therapy are not uncommon and may result in significant morbidity and/or mortality. Complications which require urgent anticipation, recognition and management may include: Metabolic (tumor lysis syndrome, hyponatremia, hypoglycemia, lactic acidosis, hypercalcemia and adrenal failure), infectious (bacterial, fungal or viral), inflammatory (pancreatitis, pneumonitis, hemorrhagic cystitis, and drugs extravasations) hematologic (bleeding, thrombosis, DIC, hyperleukocytosis, and/or cytopenia) and/or mechanical conditions (brain tumors, spinal cord, SVS, etc.). Tumor lysis syndrome results from destruction of the tumor cells resulting in release of the intracellular contents leading to the triad of hyperuricemia, hyperkalemia and hyperphosphatemia. Hypocalcaemia and renal failure follow hyperphosphatemia and hyperuricemia respectively. Laboratory TLS is defined as two or more high/low level of the above mentioned metabolites or 25% increase from the baseline levels. Clinical TLS is defined as LTLS plus renal failure, cardiac arrhythmias or seizures. Development of TLS depends on the tumor burden, cellular turnover and sensitivity to therapy. In low risk patients, prevention with hydration and allopurinol is usually adequate, while rasburicase should replace allopurinol in high risk patients and if TLS is already established. Febrile neutropenia: Children with hematologic malignancies are highly susceptible to serious bacterial, viral, fungal and other opportunistic organisms. They are immunocompromized due to any combination of neutropenia, qualitative neutrophil function, hypogammaglobulinemia, T-cell dysfunction and broken barriers. Children might be septic with hypothermia or normal temperature. Febrile neutropenic children should be handled promptly even if they do not look septic. Blood culcture should be obtained and broad spectrum antibiotic should be started ASAP. Other investigations may be needed depending on suspicion of a cause or localization of infection. Most children require hospitalization. Monotherapy is adequate in most cases. Modification should be done depending on persistence/resolution of fever, clinical progression and/or positive cultures. Antifungal or antiviral therapy might be required.

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Management of acute myeloid leukaemia in elderly and resource constrained setting

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Currently, only about 20% of Indian AML patients can afford the standard therapy of 7+3 followed by HIDAC. The stem cell transplant option is financially accessible to an even smaller subset. There is a huge unmet need for an affordable treatment option for the vast majority of the population. We believe that our innovative approach of using lenalidomide with cytosine is a viable option for treating a vast majority of patients with elderly AML, relapsed AML financially challenged segments of the population, and brings hope to this neglected demographic. For this underserved demographic subset, we came up with an innovative protocol of Oral Lenalidomide and Subcutaneous Cytosine. We found that: Lenalidomide-Cytosine is an option for the elderly AML patients who are hemodynamically stable. Remission seems to take a longer time - about 60 days. The effects of combining this with traditional options will need more clinical trials to elucidate. The option of adding azacytidine or decitabine is being considered but with lenalidomide alone. Another approach that may be considered is the addition of an intermediate dose cytarabine after achieving remission. Thus, we have tried to summarise treatment options for elderly AML with specific reference to cytosine-lenalidomide combination.

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