

Neurological complications in children with non-neurological malignancies: A single institution experience

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Abstract

Purpose: Central nervous system (CNS) involvement usually confers poor prognosis in cancer. We aimed to estimate prevalence of neurological-complications (NC) in children presenting with non-neurological malignancy and to describe type, aetiology and outcome of such complications **Methods:** A bidirectional cohort study of children (1 month-15 years) with non-neurological malignancy was conducted at tertiary-care teaching hospital, North India. Prevalence and spectrum of NC was determined. Etiological diagnosis was made using neuroimaging, cerebrospinal-fluid analysis, nerve-conduction velocity, history and clinical examination. **Results:** A total of 1572 patients (870 with haematological-malignancy; 55.6% and 702 with solid tumours; 44.4%) were enrolled. Most of them presented within 5-10 years of age and were males (72%). Overall frequency of NC was 10.5% (Haematological: 9.4%; solid: 11.8%). Highest proportion of NC was seen in RB (17.2%), followed by Neuroblastoma (16.6%), acute myeloid-leukaemia (AML) (16.6%), Ewing's sarcoma (16.1%) and Langerhans cell histiocytosis (LCH) (14.2%). Frequent symptoms were seizures (30.9%), headache (18.2%), bilateral lower-limb weakness (13.3%), altered sensorium (9.7%), cranial nerve palsy (9.1%), loss of vision (3.0%), pain in lower-limbs (1.2%), aphasia (0.6%), ataxia (0.6%) and bilateral hearing loss (0.6%). Common aetiologies of NC included CNS metastasis or intracranial extension (in RB, Rhabdomyosarcoma), spinal metastasis (in Neuroblastoma, Ewing's-sarcoma, germ cell tumour), intracranial bleed (in AML, Hodgkin's-lymphoma, ALL), CNS relapse (ALL), CNS leukaemia (in Non-Hodgkin's-lymphoma), cerebral atrophy (Wilm's-tumor) and Meningo-encephalitis (in LCH). Mortality was high in affected children (80%). **Conclusions:** Cancer-specific information about NC may be beneficial for early recognition and judicious management in order to prevent neurological or cognitive morbidity.

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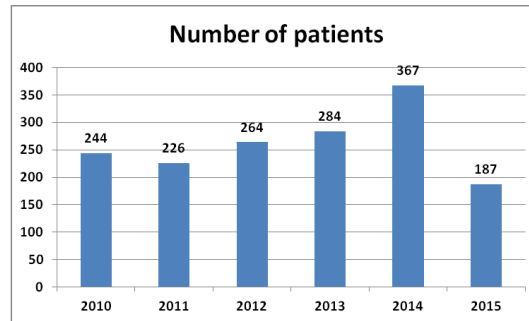


FIGURE 1 Distribution of year wise admissions of non-neurological malignancies