Introduction

Acute leukemias represent the most common malignant conditions of childhood, accounting for one third of childhood cancer ***(Lanzkowsky et al., 2011)***.

Biological heterogenicity of childhood leukemia is well documented, with the major morphological types being acute lymphoblastic leukemia (ALL) and acute myeloid leukemia (AML). ALL is the predominant leukemia in childhood which account for 75% of all cases while AML accounts for 17% of cases ***(Jansen et al., 2007)***.

Acute leukemias were almost universally fatal 50 years ago, but now have an overall survival more than 80% as regards acute lymphoblastic leukemia (ALL). This improvement in survival rate has been due to the development of new chemotherapeutic agents together with enhanced support services ***(Simon et al., 2009)***.

Unfortunately, the improvement in prognosis has been accompanied by a significant increase in morbidity and occasionally mortality. A considerable price has been paid in terms of side effects associated with intensive anticancer treatment ***(Orkin et al., 2008)***.

One particularly significant long-term consequence of ALL treatment that has been observed is impaired neurocognitive function ***(Peterson et al., 2008)*.**

Neurocognitive sequelae of ALL treatment have clear implications for academic achievement and learning abilities. However, they may also have significant consequences for emotional development, capacity for coping and emotion regulation. Specifically (EF) has been shown to underlie emotion regulation and the utilization of adaptive coping mechanisms in children and adolescents ***(Copeland et al., 2008).***

Although the long-term neurocognitive and psychosocial effects of CNS-directed chemotherapy in survivors of ALL seems to be less severe than the sequelae of cranial irradiation ***(Langer et al., 2002),*** evidence is emerging that chemotherapy-only is also associated with long-term neuropsychological sequelae ***(Buizer et al., 2005).***