P-822 - MR SPECTROSCOPY AMONG LEUKEMIC PATIENTS TREATED WITH CHEMOTHERAPY

Objective: To study in depth the neurotoxic effects of chemotherapy on the cognitive functions. Also, to explore relationships between NP function and metabolite ratios of specific brain regions using magnetic resonance spectroscopy (MRS).
Method: Observational analytical case control study which includes thirty patients with diagnosis of leukemia receiving chemotherapy “Cases” & another group of thirty patients with diagnosis of leukemia not receiving chemotherapy at all as “Controls”. All participants were subjected to Semi structured interview, Wechsler Intelligence Scale for Children (WISC) and Magnetic Resonance Spectroscopy (MRS).
Results: The means of Wechsler Intelligence Scale for Children (WISC) Total, Performance and verbal among the patient group were lower than the control group (P< 0.001). There was statistical significant difference between the two groups regarding Magnetic Resonance Spectroscopy (MRS) in different brain areas. The means of Frontal Cho/NAA, Frontal Cho/Cr, Temporal Cho/NAA, Temporal Cho/Cr, Parieto-Occipital Cho/NAA, Parieto-Occipital Cho/Cr, Basal ganglia Cho/NAA and Basal ganglia Cho/Cr among the patient group were higher than the control group and the means of Temporal NAA/Cr and Parieto-Occipital NAA/Cr among the patient group were lower than the control group.
Conclusion: MR spectroscopy is more sensitive method demonstrating metabolite changes in the brain after chemotherapy treatment of leukemic children in the absence of structural white matter abnormalities at MR imaging. A significant cognitive function difference was detected in leukemic treated cases compared to controls and correlated to the metabolic brain changes detected by MRS.

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