Cañete, A; Bernabeu, J; Fournier, C; Barahona, A; Suarez, J; Castel, V.

A NEW TOOL FOR NEUROPSYCHOLOGICAL EVALAUTION IN BRAIN TUMORS AND IRRADIATED LEUKEMIAS.

Objective: In children with brain tumors, early interventions to diminish sequelae are crutial, above all, neuropsychological deficits that worsen their social, academic achievements and quality of life. We propose to study neuropsychological deficits in a quantitative, reproducible and prospective manner with a battery of neuropsychological tests. The final aim of our study was to develop a tool to be applied in neuropsychological rehabilitation programs.

Patients and methods: Patients with brain tumor and irradiated leukemia (either survivors or in treatment) were evaluated during last year (2004). A battery of cognitive and behavioural tests were applied according to age, quantified by z-measures and transformed in two individual cognitive and behavioural profiles. A control group of healthy children was also studied. Statistical analysis was carried out by SPSS 12.0 (contingency tables, cluster and ANOVA).

Results: Forty children were evaluated (7 healthy, 8 leukemias, 18 brain and 7 intracraneal non-brain tumors). Median age at evaluation was 9,5 years (range: 4-23 y). Children with brain tumors and leukemias had deficits in general cognitive skills, memory, attention, executive functions and academic skills. Leukemic children had lower means in verbal comprehension, working memory and verbal IQ. Cluster analysis showed 6 different cognitive profiles, from minimal to severe damage. Cognitive skills followed by academic skills, motor, executive functions, language and attention were important to classify patients into one of the profiles. 43% of patients had affective troubles, 32% anxiety (DSM-IV) and 42% inattentive ADHD subtype.

Conclusions: 1/ Although most of the deficits have been already described, we have confirmed them in our population. 2/ We have improved and validated a powerful tool to study neuropsychological status in a quantitative and reproducible manner to be used in patients with CNS damage. 3/ It will be incorporated to evaluate the efficacy of our neuropsychological rehabilitation programs.