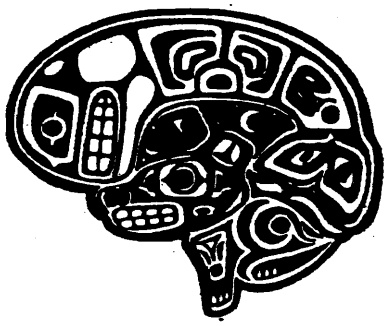
ISSN 0964-2633
http://www.blackwell-science.com/jir

JIDR

Journal of Intellectual Disability Research



volume 44
parts three & four

New Millennium Research to Practice
Congress Abstracts

11th World Congress of the International Association for the Scientific Study of Intellectual Disabilities (IASSID)

August 1–6 2000
Seattle, Washington, USA

Published on behalf of MENCAP and in association with IASSID by Blackwell Science

different activities and human conduct. This programme can be viewed as a means of socializing children.

Abstract no.: 775

Evaluation of trace elements and some enzymes in Egyptian children with Down syndrome

N. A. Meguid*, H. H. Afifi & N. Kholosy
Human Genetics Department, National Research Centre, Tahrir Str, Dokki, Cairo, Egypt

The present study investigated the activity of Cu Zn superoxide dismutase in red blood cells and glutathione peroxidase (GPx) in whole blood using spectrophotometric methods. The plasma levels of the copper and zinc cofactors, and whole blood selenium were evaluated using an atomic absorption spectrophotometer. The study included a population of 15 patients with Down Syndrome (DS) with complete trisomy 21 (group 1), translocations (group 2) and mosaicism (group 3), and 15 controls matched for age and sex. The purpose of this work was to study the gene dosage effect of SOD and its effect on glutathione peroxidase enzyme, and to find out its correlation with developmental fields. The results show that SOD and GPx activities were increased in the population with complete trisomy 21 and translocations, while in cases with mosaicism, the enzyme activities were within normal limits. Plasma copper concentrations increased, while whole blood selenium concentrations were significantly decreased in the three groups with DS. Although the present results require very subtle interpretation, these findings are powerful tools for identifying nutritional status and guiding antioxdant intervention.

Abstract no.: 776

Early intervention in Down syndrome: The effect of antioxydants

N. A. Meguid* & S. Ismail
Human Genetics Department, National Research Centre, Tahrir Str, Dokki, Cairo, Egypt

The present study investigated the role of antioxidant nutritional support in conjunction with a training Portage programme designed to improve the capabilities of patients with Down syndrome (DS). The study included 60 children with DS aged between 2 and 45 months. Twenty cases were included in an early intervention portage project and supported with antioxidants. Another 20 cases only attended the early intervention programme. The remaining group of 20 children with DS did not attend at all. The portage early intervention programme was used to evaluate the development in various fields of activity. The present authors organized a 1 year follow-up study of the first and second stages of evaluation. Initial growth parameters and developmental assessment were done, and then again at 6 month intervals. Complete blood analysis, T3, T4 and TSH were carried out every 6 months. Parents were asked to stop any additional vitamins, and to keep illness logs and follow-up the incidence of upper respiratory, ear and GIT infections. The most striking finding was the marked improvement in the health and growth of the group of children with DS attending the intervention programme in conjunction with antioxidant treatments. There was a significant decrease in the incidence of all infections, and upper respiratory and ear infections in particular. The authors also noticed a significant improvment in cognitive and gross motor development in comparison to the other groups. This study emphasizes the therapeutic effect of antioxydant nutritional intervention on the quality of life of people with DS.

Abstract no.: 777

Plasma amyloid beta protein 1–42 (Aβ42) levels are increased in older but not younger subjects with Down syndrome

P. Mehta*
New York State Institute for Basic Research in Developmental Disabilities, New York, New York, USA

The aims of the present study were to quantify Aβ40 and Aβ42 in plasma from young subjects with Down syndrome (DS < 40 years), old subjects with DS (> 40 years) and controls, and to analyse the relationships between the groups with respect to age, gender and the apolipoprotein E (ApoE) phenotype. All adults with DS have a neuropathology of Alzheimer disease (AD) by 40 years of age. A_β is implicated in AD. The possession of variants of the ApoE ε4 allele is a risk factor for the development of AD. Plasma Aβ40 and Aβ42 levels were quantified by a sandwich ELISA from the blood of 28 young subjects with DS (mean age ± SD = 30 ± 6 years), 28 age-matched controls, 32 old subjects with DS (mean age ± SD = 51 ± 7 years) and 32 age-matched controls. Aβ40 levels were higher in young subjects with DS than in controls. The Aβ42 levels in young subjects with DS and controls were similar. The Aβ40 levels were higher in old subjects with DS than in controls. The Aβ42 levels also were higher in old subjects with DS than in controls or young subjects with DS. There was a significant correlation between age and Aβ40 for subjects with DS ($r = -0.5$, $P < 0.001$) and controls ($r = -0.35$, $P < 0.007$), and age and Aβ42 for subjects with DS ($r = 0.4$, $P < 0.002$) but not for controls. The ApoE phenotyping distribution was similar between subjects with DS and controls. There was no relationship between Aβ40 and Aβ42 levels with respect to gender or the ApoE ε4 allele in either the DS or control groups. The higher Aβ42 levels in old subjects with DS versus old controls and young subjects with DS suggests that Aβ42 is selectively increased in plasma concurrently with the development of AD neuropathology in this group.