Cognitive functions in children with fetal antiepileptic drug exposure—study in Georgia

N. Gogatishvili\textsuperscript{1}, T. Ediberidze\textsuperscript{1}, S. Mamukadze\textsuperscript{1}, G. Lomidze\textsuperscript{1}, T. Gagoshidze\textsuperscript{1,2}, N. Tatishvili\textsuperscript{3}, and S. Kasradze\textsuperscript{1}

Special Issue on Controversies in Neurology. From the 10\textsuperscript{th} World Congress on Controversies in Neurology (CONy), Lisbon, Portugal. 17–20 March 2016.

Abstract

\textbf{Background and aims:} Influence of in utero antiepileptic drug (AED) exposure on cognitive development is limited and conflicting. We have assessed the late effects of fetal AEDs on cognitive development in children.

\textbf{Methods:} In this prospective cohort study children aged 3-6 years with fetal exposure to AEDs were included. Individuals from the same age range but without fetal AED exposure were enrolled as a control group. In all cases Intelligence Quotient (IQ) were assessed. A two sample T test and multiple linear regression were used. Probability less than 0.05 was considered as statistically significant.

\textbf{Results:} In total 100 subjects were evaluated. Among them 50 (mean age – 52.5 month; SD 12.8) have experienced AED exposure in utero and remaining 50 (mean age – 54.2 month; SD 14.5;) have not (unexposed group). In overall the mean IQ for exposed population was significantly lower (mean – 84.02; SD – 13.6) than in unexposed individuals (mean – 101.4; SD – 13.4)(p=0.001). Multiple regression analysis revealed mother's non-verbal IQ (B: 0.447; p=0.001), age of walking (B: -2.1; p=0.009) and breastfeeding (B: 10.03; p=0.009) to be independent factors associated with IQ. No particular AED alone showed significant association with IQ compared to others.

\textbf{Conclusions:} In utero AEDs exposure can hinder cognitive development. Breastfeeding, mother's non-verbal IQ and age of walking could independently contribute in cognitive development of individuals during early childhood.

Acknowledgements: The study is performed within scientific grant of the Shota Rustaveli National Scientific Foundation (FR/373/8-313/13).