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Comparison of metals and essential trace elements levels between Autistic Spectrum Disorders cases and their sibs in Sicily (southern Italy)

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Introduction: A role of metals exposure and essential trace element deficiency in Autistic Spectrum Disorders (ASD) etiology has been suggested by epidemiologic studies, but conclusive evidence on this topic is still lacking and controversial. We compared metals and essential trace element levels between cases both with their brothers and healthy children.

Methods: The diagnosis of ASD were performed by ADOS and ADI-R according to DSM IV (Diagnostic and Statistical Manual of Mental Disorders) criteria. Hair samples were collected from cases and sibs by single cutting from the occipital region. The samples were cut to lengths of about 1.5–2 cm using clean stainless steel scissors. Approximately 50 mg of hair were used. Metals and essential trace elements were quantified by inductively coupled plasma mass spectrometry analysis. Data of healthy children are extracted by Varrica D. All statistical analyses were performed using Statistical Package for Social Sciences (SPSS) software (SPSS Inc., Chicago, IL, USA).

Results: The study included 20 sibs and 48 cases (70.8% male) aged 2 – 17. We found substantially no evidence of differences between cases and sibs as shown by p-values reported in the table 1. Li, Al, Cr, As, Cd and Mn, Ni, Zn, Cu levels were higher and lower than healthy children, respectively.

Conclusions: Despite the limited statistical stability of the point estimates, these findings appear to support the hypothesis that additional risk conditions, presumably, are not shared by the sibs and are yet to be determined.