Abstract/Session Information for Program Number 1026T

Session Information

Session Title: Clinical Genetics and Dysmorphology **Session Type:** Poster

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Abstract Information

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Abstract Content

MEF2C mutations are a frequent cause of Rett- or Angelman syndrome like neurodevelopmental disorders. *A. Rauch[1], D. Bartholdi[1], C. M. Rueegger[1], M. Zweier[2], C. Zweier[2], E. K. Bijlsma[3], A. van Haeringen[3], W. Reardon[4], M. Zollino[5], A. Baumer[1]*
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The transcription factor MEF2C was recently identified as the phenocritical candidate gene for the 5q14.3q15 microdeletion characterized by profound muscular hypotonia, severe intellectual disability (ID) and variable neurological and minor anomalies. Phenotypic overlap with Rett syndrome was explained by transcriptional interaction of MEF2C and MECP2. Point mutations in MEF2C have been shown to represent a relatively frequent autosomal dominant cause of moderate-severe ID accounting for as much as 1.1% of patients. Nevertheless, to date only 5 patients with MEF2C point mutations have been reported. Due to the phenotypic overlap we screened a cohort of 54 patients previously tested negative for Rett and/or Angelman syndrome for MEF2C mutations or deletions and detected two patients with novel MEF2C mutations (one frameshift and one missense mutation within the MADS domain) within this cohort. In addition we identified one further patient with Rett syndrome like phenotype caused by a MEF2C deletion detected by array-CGH screening after negative MECP2 testing. Two further patients with MEF2C mutation and intragenic deletion were identified subsequently due to suspicion of a MEF2C related disorder. Of note, our patient with the novel missense mutation is the first reported to be able to speak several words at the age of 4 years functioning at the mild to moderate intellectual disability level (IQ55). In summary we present 5 novel patients with MEF2C defects increasing the total number of reported cases to 10 and further delineating the phenotype which resembles both Rett and Angelman syndromes. Our results indicate that MEF2C mutations represent a common differential diagnosis to Rett- and Angelman syndrome accounting for approximately 4 % of such cases.