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TITLE

Clinical presentation and islet autoantibody status in a UK multi-ethnic cohort of children and adults with new-onset type 1 diabetes – the After Diabetes Diagnosis Research Support Study-2 (ADDRESS-2).

AUTHORS

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BODY

Our aim was to describe recent-onset type 1 diabetes (T1D) in a multi-ethnic cohort of children and adults by clinical presentation and islet autoantibody status.

Adults and children aged 5 or older with a clinician-assigned diagnosis of T1D were recruited within 6 months of diagnosis from 152 secondary care sites in England and Wales. Demographic and clinical data were collected, and islet autoantibodies: GADA, IA2A and ZnT8A measured in those opting to give a blood sample.

From 1 September 2011 to 30 April 2016, 3377 participants were recruited: children (<17 y) 58%, male 57%; an estimated 20-24% of incident cases in the population covered. Most were of white European ethnicity 90.1% (South Asian 3.4%, black African/Caribbean 2.1% and other/mixed 3.6%). The majority had expected symptoms at presentation: osmotic symptoms 96%, weight loss 85%, and fatigue 84%. Symptom duration was typically short (median 3 weeks, IQR 2-6). A high proportion presented with diabetic ketoacidosis (DKA) 42%. Islet autoantibodies were measured in 54% and of those, one or more autoantibody was present in 83% (90% of children and 79% of adults). The odds of autoantibody positivity increased with female gender and presence of another autoimmune condition, and decreased with age, being overweight, of non-white ethnicity and having a parental history of diabetes. Prevalence and duration of symptoms were similar in the autoantibody positive and negative subgroups, and there was no significant difference in the proportions presenting with DKA.

In a multi-ethnic cohort of children and adults with a clinical diagnosis of T1D and similar characteristics of presentation, we observed phenotypic differences between the autoantibody positive and autoantibody negative subgroups. Genetic characterisation and longitudinal follow-up are warranted to help improve understanding of the heterogeneity of T1D.