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One in 300 young children may have presymptomatic type 1 diabetes

medwireNews: Around one in 300 children aged 2–5 years from the general population may be positive for islet autoantibodies on screening and therefore have presymptomatic type 1 diabetes, results of the Fr1da study suggest.

The findings are based on an analysis of data for 90,632 children from Bavaria in Germany who took part in a public health screening program between 2015 and 2019.

In all, 280 (0.31%) children were positive for two or more islet autoantibodies, including 196 (0.22%) with stage 1 diabetes (normoglycemia), 17 (0.02%) with stage 2 diabetes (dysglycemia), and 26 (0.03%) with stage 3 diabetes (clinical). The remaining 41 children had no staging information.

During a mean 2.4 years of follow-up, a further 36 (0.04%) children developed stage 3 type 1 diabetes, and the 3-year cumulative risk for this outcome among the 280 islet autoantibody-positive children was 24.9%, corresponding to an annualized rate of 9.0%.

Anette-Gabriele Ziegler (Helmholtz Zentrum München, Germany) and colleagues report that children were significantly more likely to have presymptomatic type 1 diabetes if they had a first-degree relative with type 1 diabetes (adjusted relative risk [aRR]=3.69), were obese (aRR=1.77), and were aged 4 (RR=1.50) or 5 years (RR=1.86) compared with aged 3 years and younger.

In addition, the risk for clinical type 1 diabetes was significantly higher among children with four versus two autoantibodies (hazard ratio [HR]=1.85) and among those whose screening results were positive for IA-2A (HR=3.40). By contrast, children wit rsus without GADA had a significantly lower risk

Just two (3.2%) of the 62 children with clinic e diabetic ketoacidosis, which the researchers reported prevalence rates among unscreene USA (40%).

Ziegler and team also assessed parental psyc is using the Patient Health Questionnaire-9 an r

Writing in *JAMA*, Ziegler and co-authors conclude that their study "provides information on evaluating whether public health screening might eventually be of value in some populations."

But they add that "a randomized clinical trial would be required to assess whether screening reduces diabetic ketoacidosis or affects psychological stress."

The investigators also suggest that primary care screening "could rapidly disseminate access to therapies" for children with stage 2 diabetes who may benefit from a single 14-day course of teplizumab to delay progression to stage 3.

By Laura Cowen

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