ADVANCES IN EARLY DETECTION OF TYPE 1 DIABETES IN ITALY

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INTRODUCTION
Type 1 diabetes (T1D) is an autoimmune disorder that causes insulin deficiency, primarily affecting children and young adults. In 2024, 9.2 million people worldwide had T1D, including 183,782 in Italy, with 18,491 aged 0–19 years. Diabetic ketoacidosis (DKA) at diagnosis remains a significant concern, often due to delayed detection, highlighting the need for early screening in Italy. In response, Italian Law 130/2023 mandates population-based screening for early T1D detection.

AIM
This research aims to review the literature on early T1D diagnosis in Italy, focusing on screening programs and their clinical impact.

METHODS
A comprehensive literature search was conducted using Scopus and MEDLINE, supplemented by consultation of the Istituto Superiore di Sanità website and relevant Italian legislation on screening programs for the early diagnosis of T1D.

RESULTS
The D1Ce study, led by the Italian Ministry of Health, screened children aged 2 to 11 for T1D through blood sampling, showing feasibility and strong family acceptance. Italy's pediatric screening program emphasizes early detection to slow disease progression. A survey of 2,398 children and adolescents with T1D found that 34.2% had DKA, including 13.2% with severe DKA. Additionally, an observational study based on the TrialNet Natural History Study screened 4,046 first- and second-degree relatives of individuals with T1D, identifying islet autoantibody positivity in 4.9% at first screening. Finally, a survey of family pediatricians found that 75% reported the need for additional training and support, despite recognizing the potential benefits of reducing DKA.

CONCLUSIONS
T1D screening reduces DKA at diagnosis by identifying at-risk individuals early, with Italy's pediatric program focusing on early detection to slow disease progression. Ongoing training and monitoring of healthcare professionals are essential for long-term effectiveness.

BIOG

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