SURROGATE INSULIN RESISTANCE INDICES ACROSS THE AUTOIMMUNE DIABETES CONTINUUM

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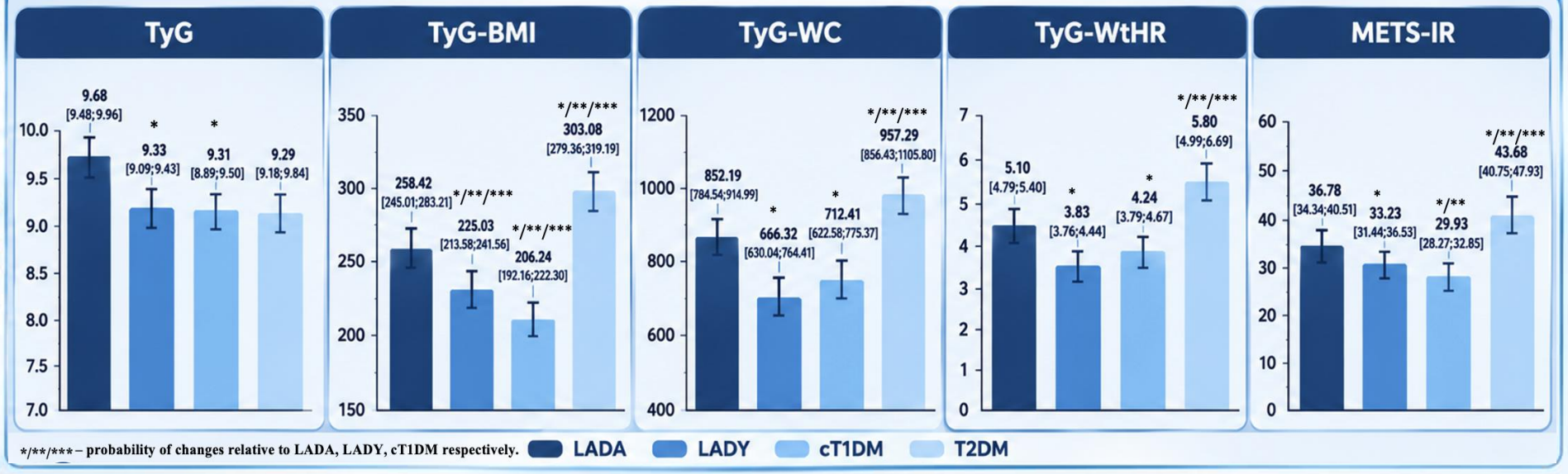
Background

Accurately differentiating slowly progressive autoimmune diabetes in youth from classical phenotypes remains a significant clinical challenge. While recognized under the broad category of slowly evolving immune-mediated diabetes, the operational entity termed latent autoimmune diabetes in youth (LADY) lacks formal standalone categorization.

Purpose

To investigate surrogate markers of insulin resistance (TyG and its anthropometric modifications, METS-IR) and adiposopathy in young patients exhibiting this slowly progressive autoimmune phenotype, comparing them across the latent autoimmune diabetes in adults (LADA), classical type 1 (cT1DM), and type 2 diabetes mellitus (T2DM) continuum.

Results



Materials and Methods

A cross-sectional comparative study included 141 patients divided into four groups:
LADA (n=36), LADY (n=30), cT1DM (n=40), T2DM (n=35).

LADA	LADY	cT1DM	T2DM
n=36	n=30	n=40	n=35

Anthropometric data, fasting glycemia, HbA1c, C-peptide, basal insulin and lipid profile were evaluated. Surrogate indices of insulin resistance were calculated from the obtained data.

Key Findings

- **TyG-BMI:** higher in LADY vs cT1DM (p=0.006), but lower than in LADA (p<0.001) and T2DM (p<0.001).
- **TyG-WC:** lower in LADY vs LADA (p<0.001) and T2DM (p<0.001), no difference vs cT1DM (p=0.764).
- **TyG-WtHR:** lower in LADY vs LADA (p<0.001) and T2DM (p<0.001).
- **METS-IR:** increased sequentially — cT1DM → LADY → LADA → T2DM.

Conclusions

- Surrogate indices of insulin resistance are accessible and informative tools for assessing metabolic burden in the age continuum of autoimmune diabetes.
- TyG is a sensitive marker of peripheral and hepatic insulin resistance.
- Atherogenic dyslipidemia is the main factor of expressed surrogate resistance in adults with LADA.

From childhood to adulthood — a spectrum of autoimmune diabetes