

AFMR Presidential Plenary Session (Scientific Session II) 1:05 PM – 3:05 PM Wednesday, April 13, 2016

13 LOW BODY MASS INDEX DIABETES IS CHARACTERIZED BY IMPAIRED INSULIN SECRETION

A Tiwari,¹ RD Gupta,² M Carey,¹ A Wickramanayake,¹ CM Kocherlakota,²
N Thomas,² M Hawkins¹. ¹Endocrinology, Albert Einstein College of
Medicine, Bronx, NY, United States; ²Endocrinology, Christian Medical
College, Vellore, India

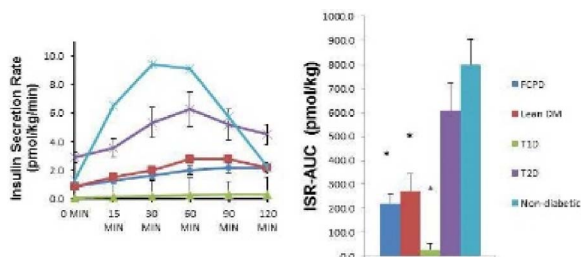
10.1136/jim-2016-000080.29

Purpose of Study Fibrocalculous Pancreatic Diabetes (FCPD) and Lean Diabetes (LD) are unique forms of diabetes affecting millions of people in developing countries, characterized by the presence or absence of pancreatic calcifications on ultrasound and insulin-requiring but ketosis-resistant diabetes. To optimize therapeutic strategies for FCPD and lean diabetes patients, it is imperative to conclusively assess their insulin secretion using gold-standard methodologies.

Methods Used Comprehensive tests were undertaken in n=22 Indian males with FCPD (age 30 ± 2 y, BMI 19.7 ± 0.6 kg/m², HbA1c $9.0 \pm 0.3\%$) and n=6 with LD (age 36 ± 4 y, BMI 18.3 ± 0.1 kg/m², HbA1c $11.6 \pm 1.3\%$), and compared with n=12 age, BMI matched ND, n=16 T1D (HbA1c $9.1 \pm 0.3\%$) and n=12 T2D subjects (age 36 ± 2 y, BMI 26.0 ± 0.3 kg/m², HbA1c $9.7 \pm 0.6\%$). Following correction of hyperglycemia for over two weeks, mixed-meal tolerance tests (MMTT) and C-peptide deconvolution analysis was performed to assess beta-cell function.

Summary of Results Glucose and C-peptide responses to MMTT suggest subjects with FCPD (14.5 ± 2.2 pmol/kg/min) and LD (15.0 ± 2.9 pmol/kg/min) have markedly impaired insulin secretion relative to both ND and T2D ($p < 0.001$), and not statistically different from T1D (figure 1).

Conclusions Thus, we report the first studies showing that patients with low BMI diabetes have impaired insulin secretion despite correction of hyperglycemia, consistent with nutritional effects on beta cell development or function.



Abstract 13 Figure 1