

Microvascular Blood Flow Responses in RGV Hispanics in Response to a Mixed Meal Challenge

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ABSTRACT

Type 2 diabetes rates in the Rio Grande Valley (RGV) are 3x higher than the national average, with etiologies being multifactorial. Impaired postprandial skeletal muscle microvascular blood flow (MBF) is one of the earliest T2D pathophysiologies noted in Caucasians. However, MBF responses are unknown in the Hispanic population of the RGV. **PURPOSE:** Our goal in this study was to determine whether normoglycemic Hispanic individuals in the RGV exhibit impaired skeletal muscle MBF responses compared with healthy Caucasian individuals from a previous study. **METHODS:** 15 Hispanic individuals from the RGV with no family history of T2D (FH-), and 13 with a family history of T2D (FH+) were recruited to determine skeletal muscle MBF responses to a mixed-meal challenge (MMC). MBF was measured via contrast-enhanced ultrasound while fasting, and again one hour after consuming the MMC. **RESULTS:** We previously reported that in Caucasian individuals, MBF increases postprandially in both FH+ ($p < 0.01$) and FH- ($p < 0.05$) groups. However, in Hispanic individuals of the RGV, there was no significant change in MBF from fasting to postprandial (1.51 ± 0.74 SEM, and 1.01 ± 1.19 SEM respectively, $p = 0.5$). When separating by FH group, no changes from fasting to postprandial MBF were noted in either FH- (0.75 ± 0.24 SEM and 1.2 ± 0.35 SEM fasting and postprandial MBF respectively, $p = 0.26$) or FH+ (2.58 ± 1.68 SEM and 0.85 ± 0.29 SEM fasting and postprandial MBF respectively, $p = 0.31$) groups. **CONCLUSION:** Apparently healthy Hispanic individuals of the RGV display impaired skeletal muscle MBF responses compared with healthy Caucasian individuals. Further, there were no differences in skeletal muscle MBF responses between FH groups in Hispanic individuals of the RGV. Further research is needed to determine why this population displays early microvascular impairments.