Adipose Insulin Resistance Relates to Perturbed Renal Hemodynamics in Obese Youth with and without Type 2 Diabetes

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Objectives
• There is a need to better understand the pathophysiology of early diabetic kidney disease (DKD) in youth with type 2 diabetes (T2D).
• The objective of this study was to compare intrarenal hemodynamic function between obese youth with and without T2D and relate these measures to adipose insulin resistance (IR).

Methods
• We assessed insulin sensitivity and kidney function in obese youth with and without T2D.
• Gomez equations were used to calculate parameters of intrarenal hemodynamic function.
• Statistical comparison was done using the nonparametric Mann Whitney test, and correlations were determined using nonparametric Spearman’s rho.

Results
• FFA suppression was attenuated in youth with T2D compared to obese controls (55.6% vs. 92.1%, p<0.0001) (right), indicating adipose IR.
• Impaired FFA suppression was associated with higher intraglomerular pressure, higher efferent arteriolar resistance, and higher renal vascular resistance (below).

Conclusion: Impaired FFA suppression was associated with perturbed renal hemodynamic parameters, indicating a potential role for adipose tissue IR in the development of early DKD.