At the 7th World Congress on Insulin Resistance, researchers from the UCSF Diabetes Center received awards for their new research involving insulin resistance. Sinan Tanyolac, MD, a UCSF visiting scholar from Istanbul University who works closely with Diabetes Center researchers Ira Goldfine, MD and John Kane, MD, received first place for studies on the genetics of insulin resistance and type 2 diabetes.

The team recently identified variants in the protein, High Mobility Group A1 (HMGA1) -- a nuclear transcription factor which plays a critical role in the regulation of the insulin receptor gene. When the HMGA1 expression is down regulated, it causes a reduction of the insulin receptor on the cell surface, impairing the regulation of the insulin signaling pathway thus causing insulin resistance. Of great significance -- the team estimates that 10% of American, Italian and French patients with type 2 diabetes have this HMGA1 variant which predisposes them to insulin resistance. Thus, the HMGA1 gene may serve as a predictive marker of type 2 diabetes.

Also honored for their research at this meeting were Jack Youngren, PhD, Umesh Masharani, MD, and Ira Goldfine, MD for their clinical research studying insulin resistance in lean prediabetic subjects. They observed that in these subjects insulin resistance was associated with preferential activation of the muscle JNK stress kinase pathway which inhibits insulin signaling.

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