

## Subclinical Hypothyroidism Is Independently Associated with Microalbuminuria in a Cohort of Prediabetic Egyptian Adults (*Diabetes Metab J* 2013;37:450-7)

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We sincerely appreciate the interest and comments regarding our study, “Subclinical hypothyroidism is independently associated with microalbuminuria in a cohort of prediabetic Egyptian adults” which was published in *Diabetes & Metabolism Journal* 2013;37:450-7.

Our responses to Dr. In-Kyung Jeong’s comments follow:

First, in our study, thyroid stimulating hormone (TSH) was significantly associated with insulin resistance and fasting insulin whereas, there was no significant association between the level of TSH and hemoglobin A1c (HbA1c). This can be explained by: Both subclinical hypothyroidism (SCH) and prediabetes are associated with insulin resistance. Moreover, patients with SCH have insulin resistance that is comparable with that of the patients with hypothyroidism [1], so it is expected that insulin resistance to be correlated with TSH; however A1c still in the prediabetic range (relatively narrow and low range) which can explain such insignificant association.

About the study done by Billiac-Komarica et al. [2] the study group was different as a number of the study group was diabetic and the others were impaired glucose tolerance.

Secondly, we know that hypothyroidism patients has usually anemia which leads to falsely elevated HbA1c and also SCH can result in anemia (in lower percentages). As we did not depend on A1c in the diagnosis of prediabetes (World Health

Organization criteria, 2006) [3], so we actually did not evaluate for anemia in this study population; the main aim was evaluation of the possible association between SCH and microalbuminuria among a cohort of Egyptian adults with prediabetes.

Thirdly, we agree with you about that the main cause of SCH in type 1 diabetes is autoimmune thyroiditis, about measurement of thyroid auto-antibody; actually we had limited resources to measure thyroid autoimmune antibodies for such large size study population. Anyhow this is one of our limitations and we would warrant recommending further studies to investigate this issue.

Fourthly, we agree with you about further prospective studies are needed to confirm the clear association in multiple ethnic groups and large prospective studies to clarify the contradictory results as regard the association between SCH and diabetic microvascular complication.

Thank you for taking interest in this study and for your thoughtful comments.

### CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

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**REFERENCES**

1. Maratou E, Hadjidakis DJ, Kollias A, Tsegka K, Peppas M, Alevizaki M, Mitrou P, Lambadiari V, Boutati E, Nikzas D, Tountas N, Economopoulos T, Raptis SA, Dimitriadis G. Studies of insulin resistance in patients with clinical and subclinical hypothyroidism. *Eur J Endocrinol* 2009;160:785-90.
2. Bilic-Komarica E, Beciragic A, Junuzovic D. Effects of treatment with L-thyroxin on glucose regulation in patients with subclinical hypothyroidism. *Med Arh* 2012;66:364-8.
3. World Health Organization, International Diabetes Foundation. Definition and diagnosis of diabetes mellitus and intermediate hyperglycaemia: report of a WHO/IDF consultation. Geneva: World Health Organization; 2006.