COMMENTS AND RESPONSES

Insulin Resistance and Hyperinsulinemia Are Related to Plasma Aldosterone Levels in Hypertensive Patients

Response to Colussi et al.

We read with interest the article by Colussi et al. (1) on the relationship between insulin resistance, hyperinsulinemia, and aldosterone levels in hypertensive patients. The authors observed that the homeostasis model assessment index is correlated with plasma aldosterone. They conclude that in patients with hypertension, this relationship might contribute to maintenance of high blood pressure and increase cardiovascular risk. We agree with Colussi et al. on this hypothesis, and we suggest the autonomic nervous system as a possible additional biological "link" in the relationship between insulin resistance, hypertension, and cardiovascular risk.

Additionally, an increase of plasma insulin level is related to an increase of urinary and plasma norepinephrine (2). In a previous study (3), we observed an impaired cardiovascular autonomic function in insulin-resistant subjects. We evaluated the cardiovascular autonomic function by heart rate variability analysis, and we reported an impaired cardiovascular autonomic activity with a sympathetic hyperactivity in both daytime and nighttime.

Moreover, we reported a linear relationship between insulin resistance and cardiovascular autonomic dysfunction. Indeed, we have observed that homeostasis model assessment index values are linearly related with low frequency values, an expression of sympathetic activity.

We suggest that several mechanisms, such as high aldosterone levels and sympathethic hyperactivity, might contribute to the cause and maintenance of hypertension in insulin-resistant subjects. In conclusion, we want to suggest for Colussi et al. to evaluate a relationship between insulin resistance, hyperinsulinemia, and aldosterone levels also in normotensive subjects.

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