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Letters to the Editor

Heterogeneity of Plasma IRI Responses in Patients with IGT and Diabetes

Dear Sir,

I read with interest the letter of Professor Kosaka and Dr. Akanuma to the editor in the April 1980 issue of Diabetologia on "Heterogeneity of Plasma IRI Responses in Patients with IGT". We have published observations on the heterogeneity of insulin responses in IGT and asymptomatic diabetes since 1974.

In 1974, we reviewed published data on the nature of the plasma insulin responses to orally administered glucose of nonobese patients who would presently be classified as having impaired glucose tolerance or diabetes without fasting hyperglycaemia [1]. We pointed out that disagreement existed among investigators on the magnitude and pattern of insulin responses to a glucose load in such patients. From our own prospective studies we concluded that although the magnitude of individual insulin responses encompassed a wide spectrum, there were two subgroups of patients [1]. In one group, greatly decreased (delayed and subnormal) insulin responses, in comparison to the mean response of the control subjects, appeared to be the determinant, at least in part, of abnormal carbohydrate tolerance. At the other extreme, another group of patients had glucose intolerance associated with super-normal or excessive insulin responses. This suggested that hyperinsulinaemia in those patients was secondary or compensatory to factors which caused glucose intolerance. Subsequently, we reported that progression to insulin-requiring diabetes (fasting hyperglycemia unresponsive to diet and/or sulfonylures treatment) occurred only in patients with low insulin responses or with insulin responses which were below the mean response of the control subjects [2, 3]. None of the patients with high insulin responses, or with responses exceeding the mean of the control subjects, have progressed to insulin-requiring diabetes with a follow-up of up to more than 20 years [2, 3]. This indicated that the pattern of the insulin response associated with carbohydrate intolerance in nonobese patients with IGT or diabetes had prognostic implications and supported the conclusion that there is a heterogeneity of insulin responses to glucose that may delineate differing syndromes associated with carbohydrate intolerance [1, 2, 3]. Heterogeneity of insulin responses is also supported by an aggregation of patients with low insulin responses in some, and with high insulin responses in other families with noninsulin-dependent diabetes of the MODY type [1, 3].

Reaven and Olefsky have concluded also that true heterogeneity in insulin responses and, in addition, in insulin resistance, exists in patients with impaired glucose tolerance [4].

Sincerely yours,

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References

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