



RESPONSE TO COMMENT ON ANJANA ET AL.

## Incidence of Diabetes and Prediabetes and Predictors of Progression Among Asian Indians: 10-Year Follow-up of the Chennai Urban Rural Epidemiology Study (CURES). *Diabetes Care* 2015; 38:1441–1448

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We thank Dr. Kawada for the comment letter (1) in response to our article (2). Kawada has made some interesting points on predictors of progression to diabetes and prediabetes. He suggests including hypertension as a predictor of progression to dysglycemia. He also suggests using a time-dependent Cox regression model in the analysis. Our replies are as follows.

In the 10-year follow-up of the Chennai Urban Rural Epidemiology Study (CURES), we reported on the predictors for the progression from normal glucose tolerance to various stages of dysglycemia (2). In our study, we reported on the predictors of incident diabetes, prediabetes, and dysglycemia separately. Age, positive family history of diabetes, 2-h plasma glucose, glycosylated hemoglobin (HbA<sub>1c</sub>), low HDL cholesterol, and physical inactivity were predictors of progression to dysglycemia; age, 2-h plasma glucose, low HDL cholesterol, and physical inactivity were found to independently predict incident prediabetes; and family history of diabetes and HbA<sub>1c</sub> were found to predict incident diabetes. Koller et al. (3) in a 5.9-year follow-up study reported age, impaired fasting glucose, and metabolic syndrome as predictors for diabetes and family history of diabetes and obesity

as additional predictors for prediabetes. Unlike Koller et al. (3), who included prediabetes as a risk factor for diabetes, we used the continuous variables fasting plasma glucose, 2-h plasma glucose, and HbA<sub>1c</sub> as independent risk factors. Similarly, instead of metabolic syndrome as a risk factor, we used the individual components of metabolic syndrome. We preferred to use independent factors rather than a constellation of risk factors for prediction (such as metabolic syndrome), as we could then be more specific in targeting the independent risk factors for intervention. Knowledge of the predictors for the development of prediabetes and diabetes may enable the implementation of early treatment and prevention strategies and at least delay the further progression.

In our study, hypertension did not turn out to be a significant predictor for diabetes, prediabetes, or dysglycemia using the Cox proportional hazards model. As suggested by Kawada (1), and as shown by Qiu et al. (4), we conducted the analysis by including hypertension in the model but hypertension was not found as a significant predictor for diabetes in our population. It is possible that the effect of hypertension may have been confounded by other metabolic risk factors such as obesity.

We used the time-dependent Cox proportional hazards regression model to report on the association of various factors with progression to diabetes, prediabetes, and dysglycemia. As each of the risk factors that we studied may change over time, we used the time-dependent model instead of non-time-dependent, or fixed, model.

**Duality of Interest.** No potential conflicts of interest relevant to this article were reported.

### References

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