



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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*Diabetes Care* 2015;38:e211 | DOI: 10.2337/dc15-1734

Anjana et al. (1) conducted a 9.1-year follow-up study targeting 1,376 individuals aged  $\geq 20$  years to elucidate the predictors of progression to dysglycemia, which included diabetes and prediabetes. They adopted the Cox proportional hazards model, and hazard ratios (95% CI) of independent variables were presented. I am satisfied with the adequate number of new-onset diabetes or prediabetes events, and I have some queries on their study.

First, significant predictors of progression to dysglycemia from normal glucose tolerance in their study were age, family history of diabetes, abdominal obesity, 2-h plasma glucose, glycated hemoglobin (HbA<sub>1c</sub>), low HDL cholesterol, and physical inactivity. Koller et al. (2) also conducted a risk assessment for prediabetes and type 2 diabetes (T2D) with a 5.9-year follow-up study, and common significant predictors for T2D and prediabetes were age and metabolic syndrome. Prediabetes was selected as a significant predictor for T2D, and family history of diabetes and BMI were selected as significant predictors for prediabetes. Progression to dysglycemia from normal glucose tolerance was not evaluated, and prediabetes was included as one of

the independent variables. Both studies classified the level of dysglycemia, although information on prediabetes was used differently.

Second, Anjana et al. (1) did not use information on hypertension as an independent variable, although Koller et al. (2) reported that it was not selected as a significant predictor for T2D and prediabetes. On this point, Qiu et al. (3) recently reported the combined effect of prediabetes and hypertension on the subsequent occurrence of T2D. They adopted a logistic regression model, and the odds ratios of hypertension without prediabetes against no symptoms of hypertension and prediabetes did not become significant. But adjusted odds ratios (95% CI) of prediabetes without hypertension and prediabetes with hypertension for T2D were 2.46 (1.19–5.09) and 6.37 (3.41–11.89), respectively. This means that hypertension has some contributions in combination with prediabetes. I recommend Anjana et al. use information on hypertension when evaluating the predictors of progression to dysglycemia.

Finally, Anjana et al. described the limitation of the study with lack of

year-by-year follow-up data in their discussion section, as they adopted the Cox proportional hazards model with enough number of events (progression of dysglycemia). For stable estimate by Cox model, the monitoring interval should be set with shorter period of time. Anyway, the authors conducted a long-term follow-up study, and the change in the independent variables during the follow-up should also be considered by using a time-dependent Cox regression model.

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

## References

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