CAPSULE COMMENTARY

Capsule Commentary for Raghavan et al., Association of Glycemic Control Trajectory with Short-term Mortality in Diabetes Patients with High Cardiovascular Risk: a Joint Latent Class Modeling Study

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Most studies on diabetes outcome have focused on average or single measures of diabetes control. Raghavan et al.¹ aimed to compare associations of hemoglobin A1c (HbA1c) trajectories vs single HbA1c values with short-term mortality in diabetic patients being evaluated for coronary artery disease (CAD). They focused on three groups, those with a stable HbA1c, and those with either a declining or increasing HbA1c. Results were remarkable for higher short-term mortality in trajectories with intermediate baseline HbA1c and increasing HbA1c after catheterization. This investigation suggests HbA1c trajectories may help risk stratify short-term complications in diabetic patients compared with a single HbA1c value.

This retrospective observational cohort study was limited by several factors. First, association is not causation, and there was little information about why this group of subjects had a rising HbA1c. Secondly, the groups had differing baseline HbA1c, though they found no difference in outcomes by this measure, it would suggest that there were inherent differences in the groups. Third, this was a select group, patients undergoing evaluation for CAD. Confirmation of these findings in a more general diabetic population would be helpful, but the relatively high mortality rate in patients with potential CAD may mean that these findings would not be replicated in other populations. Finally, the differences were small; the use of a truncated y axis could easily mislead the reader to believe the differences were larger than reported.

In an ever-changing world where data is easily obtainable, trending biomarkers may be able to be useful in stratifying patients' clinical outcomes. Furthermore, this study aimed to

compare the associations of biomarker trajectories compared with a single value on a 2-year all-cause mortality in diabetic patients undergoing evaluation for CAD. Laiteerapong et al. investigated the association of 10-year HbA1c trajectories with micro-vascular and macro-vascular diabetes-related outcomes including mortality. They found that the moderate increasing late and moderate peaking late trajectories had a lower risk of mortality than the low stable subgroup. Additionally, there was an increased risk of mortality associated with high decreasing early and moderate peaking early subgroups.² These findings differed from the findings presented by Raghavan et al. It is possible that other biomarkers, such as blood pressure control or lipid levels, may be required to be included to fully evaluate whether HbA1c trajectories are useful in predicting clinical outcomes.

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Compliance with ethical standards:

Conflict of Interest: The authors have no conflicts of interest with this manuscript.

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