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Use of Inpatient Glucose Values in Identifying Patients at High Risk for Diabetes

To the Editor:

With increasing costs of the management of diabetes mellitus and its complications in the United States and worldwide, novel approaches tackling opportunities for early diagnosis of diabetes in the community are welcome. In this regard, a proof of concept study by Rhee et al[1] is a timely contribution to the growing field of investigations assessing different opportunistic methods to identify patients at risk for the development of diabetes. Although the findings are intriguing, some considerations should be discussed to fully understand how the study results should be applied in the clinical setting or future research studies outside of the Veterans Affairs (VA) system.

It should be noted first that the annualized incidence of new cases of diabetes in the study by Rhee et al[1] significantly exceeds statistics by the Centers for Disease Control and Prevention. In 2015, an estimated incidence of diabetes among US adults was 6.7 per 1000 persons.[2] In stark contrast, Rhee et al[1] demonstrated an average annual diabetes incidence in the study cohort that was approximately 2- to 3-fold higher compared with the Centers for Disease Control and Prevention data. We believe that the potential cause of diabetes overdiagnosis in the authors' hands is due to use of information on prescription of an antidiabetes agent as one of the diagnostic criteria. The hypoglycemic agent-inferred diabetes diagnosis criterion by itself can be misleading because of prevalent off-label use of metformin for prediabetes management in the VA system. Therefore, it is not clear how many veterans during posthospitalization were truly diabetic for the purposes of statistical analyses.

Another important consideration that is pertinent to the study is related to the sizable use of glucocorticosteroids for management of comorbid conditions, such as chronic obstructive lung disease and asthma, in hospitalized veterans who are then more likely to continue steroids as outpatients. Because steroid medications can increase the risk of diabetes,[3] VA providers prescribing glucocorticosteroids in inpatient or outpatient arenas can be biased toward testing blood glucose levels more frequently in the hospital and being more aggressive with diabetes case finding in ambulatory setting compared with glycemic assessment practices in patients not treated with steroids. We were not certain if Rhee et al[1] were able to adjust their analyses for the presence of steroid-sensitive comorbid states.

The results of the study by Rhee et al[1] offer a new tool in our quest for early diagnosis of diabetes by suggesting being more vigilant with patients who demonstrated dysglycemia during hospitalization. The validity of the proposed blood glucose thresholds that are associated with the higher diabetes incidence can be further strengthened if the stated points are addressed by the authors.

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