

## **Factors That Associate with Under-Diagnosing Prediabetes in Primary Care: A Retrospective Study**

An V. Nguyen. *Scripps Clin & Res Fndn*

An V. Nguyen<sup>1</sup>, Quoc Nguyen<sup>2</sup>, Ken Fujioka<sup>1</sup>.

<sup>1</sup>SCRIPPS CLIN & RES FNDN, La Jolla, Calif., <sup>2</sup>UCSD, La Jolla, Calif.

Diabetes is the leading risk factor for cardiovascular diseases and other comorbidities that significantly reduce the quality of life. Prediabetes is the preceding condition that increases the risk of Type 2 Diabetes Mellitus (T2DM). The Diabetes Prevention Program Outcomes Study (2002-2014) shows that regression from prediabetes to normoglycemic level is associated with a reduction in cardiovascular risk, while such reduction going from diabetes to normal glucose was not statistically significant. As such, it is critical that patients are screened, diagnosed, and counseled for the treatment of prediabetes. This study investigates how well a large hospital system in suburban San Diego, California diagnoses prediabetes and determines if patient demographics could help explain the missed diagnoses. Patient records from five outpatient clinics under Scripps Health who qualified for the diagnosis of prediabetes determined from either more than one fasting blood glucose (FBG) 100-125 mg/dL, or Hemoglobin A1c (HbA1c) 5.7-6.4% between 2018-2020 were reviewed. Factors such as age, race, sex, body mass index (adjusted for different races), and comorbidities were compared between the correctly diagnosed and missed diagnosed. Only 37% of the qualifying patients were diagnosed with prediabetes or impaired fasting blood glucose; of these patients 93% qualified by HbA1c. Of the factors reviewed, overweight and obesity, female sex, Asian race, comorbidities including lipid disorders, and conditions requiring systemic steroids are positively correlated with a correct diagnosis of prediabetes. Factors like male sex, Black/African American race, comorbidities requiring immunosuppressants, antineoplastics, and iron replacements are negatively correlated with a correct diagnosis. This study demonstrates that prediabetes was grossly underdiagnosed, and the diagnosis seems to be made primarily by HbA1c. These data suggest that the convenience of HbA1c and patients' BMI, race, gender and comorbidities play a role in healthcare providers' screening for and making the diagnosis of prediabetes.

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