Opinion

Hemoglobin A1c Cut-off to Diagnose Diabetes in Iranian Population

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HbA1c test has the advantage of simple specimen collection and little biological variation. However, racial disparities, age, and HbA1c assay variations may affect the results.

ADA has recommended to determine HbA1c cut-offs regionally. According to a systematic review by Bennett et al, HbA1c >6.1% was the recommended optimum cut-off point in most studies. However, optimal cut-off levels may vary by ethnic group, age, gender and prevalence of diabetes in the population.[1]

In a systematic review conducted by Haghdoost et al, the prevalence of diabetes in Iranians over 40 years old was estimated to be around 24%,[2] while this rate was reported to be about 11.5% in Iranian adults aged 25–70 years.[3]

According to several epidemiological studies, the prevalence of microvascular disease sharply increases passing the threshold. In a study by Razi et al,[4] the optimal cut-off point for HbA1c to predict diabetes was 5.9% (sensitivity of 66.7% and specificity of 81.2%). In contrast, the ADA cut-off point for diabetes detection yielded a sensitivity of 39.8%.

Maximum sensitivity can be helpful for prompt diagnosis of diabetes, which leads to the early management and reduction of the costs of diabetes complications. On the other hand, using cut-off values with maximum specificity could prevent the false positive detection of diabetes in healthy people.

Conflict of Interest Disclosures
None.

Ethical Statement
Not applicable.

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