HbA1c is the nonenzymatic glycated product of the hemoglobin beta-chain at the valine terminal residue. It constitutes about 60-80% of total glycated hemoglobin. It is normally present, at low levels, in circulating red cells because of the glycosylation reaction between hemoglobin and circulating glucose (1). There is no doubt that A1C is a useful index of glycemic control. This has been reinforced by the Diabetes Control and Complications Trial (DCCT) (2). Although some previous reports have advocated it (3,4) the use of A1C as a tool for the diagnosis of diabetes is controversial (5-7). Previously the American Diabetes Association did not recommend its use as a diagnostic tool and suggested it should only be used for monitoring diabetes (8). Even it has not been recommended to be used as the sole measure of glycemic control (9).

However at the 69th Annual ADA meeting HbA1c was suggested to be used as a diagnostic tool. But it was not recommended for diagnosis at this time (10). It is well established that HbA1c cannot be used to diagnose DM because of the following problems:

- Differences in assay methods for A1C.
- Reduced total hemoglobin or increased turnover of red blood cells (RBCs). The level of A1C will be reduced even in the presence of high plasma glucose.
- The structure of hemoglobin itself. Qualitatively, any disorder that affects hemoglobin production, particularly the beta-chain, will affect the A1C results. Patients with E hemoglobinopathy are likely to form glycated hemoglobin E\textsubscript{1c} instead of A1C, leading to a low A1C level (11). Diagnosis of DM would be easily missed unless suspected and hemoglobin electrophoresis performed.
- Presence of renal failure (12).
- Other conditions that can lead to a falsely elevated A1C include alcoholism (13), lead poisoning, opiate addiction (1), excessive use of salicylate (11) and pregnancy.

Moreover it takes three months for A1C to reach a high level if patient is having new onset DM. There is likelihood that cases would be missed if this is the sole method to diagnose DM during this period. The diagnosis of DM should be confirmed by a fasting blood sugar level if A1C is high. If that is so then why do an A1C in the first place. The result of FBS would be ready instantly whereas in Kashmir at present A1C result is ready on the third or fourth day. The cost of A1C is around 300-400 Indian rupees whereas an FBS is done for 30-40 IR. So why spend ten times more for diagnosis by a controversial investigation.

These factors need to be considered as they limit the use of A1C as a diagnostic test for diabetes. One is therefore left to wonder what made the experts to consider recommending the use of A1C for diagnosis of DM.
References:


**Conflict of Interest:** None

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