

## **SUMMARY & CONCLUSION**

The following are five criteria which define the optimal conditions for screening for a particular disorder:

- The disorder should be an important public health problem
- An early asymptomatic stage should exist
- There is a suitable screening test
- An accepted treatment should be available
- There is evidence that early treatment during the asymptomatic stage improves long-term outcome
- It has not been firmly established that early detection of type 2 diabetes and intervention improve long-term outcomes. However, the arguments for widespread screening to identify undiagnosed cases of type 2 diabetes are much stronger than for type 1 diabetes.

The global prevalence of type 2 diabetes continues to rise

- There is debate about the ideal screening test, but measurement of glycated hemoglobin (A1C), fasting blood glucose (or, under some circumstances, random blood glucose or 2-hour post-glucose challenge) is adequate for identifying many undiagnosed cases of diabetes.<sup>3,7</sup> Persons at high-risk for the development of diabetes can be identified efficiently during screening for undiagnosed type 2 diabetes using the same measurements of glycemia.

Undiagnosed diabetes can cause progressive microvascular damage. At the time of diagnosis, approximately 20 percent of newly diagnosed patients with type 2 diabetes have diabetic retinopathy<sup>8</sup> and 10 percent have nephropathy.

Interest has been increasing recently in non invasive diagnostic testing, some of this stems from the AIDS epidemic in the west, which has provided a new rationale for haemophilia, while other factors include new development in home based diagnostic tests and a demand of samples collected in the home or work place. Diagnostic tests based on fluid generally use blood and urine and less frequently the esoteric fluids such as saliva, sweat and tears.

In the present study we tried to explore the possibility of using saliva to reflect the glucose concentration in blood, thereby making self measurement of glucose less invasive. 200 diabetic patients and 200 age and sex matched non-diabetic individuals were included in the study. Venous blood and saliva samples in both fasting and post prandial state were subjected for estimation of glucose concentration.

From the study it was inferred that:

Maximum number of patients were in age group between 41-60 years.

Glucose was detectable in saliva of both diabetic and non diabetic individuals. A significant positive correlation was established between blood glucose and salivary glucose levels.

Among diabetic patients the fasting salivary levels ranged between 0-31 mg/dl. Among the diabetic patients the postprandial salivary levels ranged between 0-40 mg/dl. The best cut off value at fasting state for saliva would be 2mg/dl with sensitivity of 73.3% and specificity was 60.2%. The positive predictive value was 51.4% and negative predictive value was 79.7%.

The best cut off point at post prandial state would be either 3.5mg/dl with sensitivity of 80.1% and specificity of 76.8% Positive predictive value was 72% and negative

predictive value was 83.8% or 4 mg/dl where we observed a sensitivity of 78.9%, Specificity of 78.6%, positive predictive value 73.3% and negative predictive value 85.7%.

It is becoming increasingly apparent to investigators and clinicians in a variety of disciplines that saliva has many diagnostic uses and is especially valuable in the young, the old and infirm and in large scale screening and epidemiological studies. The highly sensitive test procedures that are now commonplace make it practical to quantitative, despite very low concentrations of a number of hormones and drugs in saliva. Indeed all steroids of diagnostic significance in routine clinical endocrinology can now be readily measured in saliva. Tests based on saliva have already made substantial inroads into diagnosis and hence could be considered in diagnosis of diabetes.

**Scope:** From the present study thus the standard cut off value for fasting salivary sugar level was 2mg/dl, and at post prandial salivary glucose levels were 3.5 and 4 mg/dl for patients of Belgaum, Karnataka. These estimated values could be taken as reference values and similar studies should be done at different Indian states or regional centers so as to validate a standard salivary glucose level to be used for screening of diabetes as a non invasive, simple and cost effective method.