Letters to Editor

Effect of Different Anticoagulants on HbA1c Estimation and its Stability

Sir,

Glycated hemoglobin/HbA1c is always considered as a stable indicator of glycaemia for the preceding three months.\(^1\) Its potential utility in diabetic care was first reported in 1985 WHO report, and by 2010 all the major expert committee and association across the globe including the ADA has recommended HbA1c for the diagnosis of Type 2 DM, besides its role in prognosis.\(^2\) So, the importance of HbA1c estimation in diabetes has increased manifold in recent years.

Most of the commercial kits for HbA1c estimation requires sample to be collected in EDTA anticoagulant. This requires additional sample collection for the patient. So, we estimated HbA1c in sample collected in K<sub>3</sub>EDTA, Na-citrate, Na-heparin and Na-fluoride/Na<sub>2</sub> EDTA vials separately and then to see for any variation. All the vials used are of BD (Becton, Dickinson and Company) Vacutainer manufactured by Becton, Dickinson India. HbA1c is estimated after 2-3 hours of blood collection by cation exchange HPLC based BioRad D 10 analyzer. It is said that HbA1c has high pre-analytical stability and is stable for one week when stored at 4°C and for one year when stored at −70°C.\(^3,4\) So, to verify the stability of HbA1c in the above vials HbA1c is estimated for 7 days in the same vial. Just after estimation, vials are stored at 4°C and then HbA1c measured every day till 7<sup>th</sup> day in all the vials, marking 1<sup>st</sup> day as 0 day.

As indicated by Figures 1-6, there is no significant change in the HbA1c values estimated in the vials containing different anticoagulant. This is in accordance with the findings of Mailankot et al.\(^5\) Figures 1-6, also shows that the stability of HbA1c is not altered in the vials containing different anticoagulant when stored at 4°C for 7 days. The findings withdraws the need for a separate EDTA sample for HbA1c estimation as advocated by various commercial kits, and it also ensures the stability of the collected sample for 7 days when stored at 4°C.

To conclude, we can infer that the unnecessary extra sample collection for estimation of HbA1c could be avoided which in turn can improve patient compliance and this may contribute towards a better diabetic care. It can also be accounted that the avoidance of an extra Vacutainer for HbA1c can reduce the cost of HbA1c test, which is undoubtedly a costly test.
Streptococcus mitis: An Unusual Causative Agent for Urinary Tract Infection

Sir,

Urinary tract infection (UTI) is one of the frequent bacterial infections observed in clinical practice and is usually caused by members of the Enterobacteriaceae family, in particular *Escherichia coli* and Gram-positive cocci such as *Enterococcus spp* and *Staphylococcus spp*. [1] But we encountered a case of UTI caused by an unusual pathogen - *Streptococcus mitis*, a member of the viridans group streptococci (VGS).

A 55-year-old diabetic female attended the gynaecology outpatient department of our hospital with recurrent burning micturition, low grade fever, and lower abdominal pain since one month. For this, she had been empirically treated with ciprofloxacin but with no improvement. On examination, she had an urethrocele causing difficulty in emptying her bladder leading to cystitis. She was diabetic, human immunodeficiency virus (HIV) sero-negative and her hematological and biochemical parameters were within normal limits except for a neutrophilic leukocytosis. Microscopic examination of her urine samples for two consecutive days revealed plenty of pus cells and traces of albumin while aerobic culture of both the samples showed significant bacterial growth (colony count > 10⁵ CFU/ml) on CLED agar. Isolated organisms were Gram-positive cocci mostly in chains, catalase negative, bile esculin negative even after 48 hours, showed no growth on nutrient agar and were nonhemolytic on 5% sheep blood agar. This bacterium was further identified as *S. mitis* by VITEK-2 system with GP-67 card. The isolate was susceptible to amoxicillin–clavulanic acid, ceftriaxone, gentamicin, and vancomycin but resistant to ampicillin, azithromycin, ciprofloxacin, and ofloxacin. The sensitivity was cross-checked by Hicomb MIC strips before handing out the susceptibility results.

The patient was successfully treated with amoxicillin–clavulanic acid for one week along with physiotherapy. Although the VGS is a known commensal organism in the human mucosa of the oral cavity, upper respiratory tract, female genital tract, and gastrointestinal tract; it has been documented to be a frequent cause of endocarditis, meningitis, pneumonia, and bacteremia particularly in patients with immunosuppressive conditions. [2,3] There are occasional reports of genito-urinary infection by VGS, but UTI by *S. mitis* is unusual. [4] In our case, risk factors for this infection were diabetes and the urethrocele. The patient was asymptomatic after proper antibiotic treatment along with control of blood sugar.

---

**Figure 5:** The results for adult diabetic samples

**Figure 6:** The results for adult diabetic samples

---

**Booloo Sharma, Devajit Sarmah, Pavan Sonker**

Department of Biochemistry, R D Gardi Medical College, Ujjain, Madhya Pradesh, India

**Address for correspondence:**
Dr. Booloo Sharma,
E-mail: sharmabooloo@gmail.com

**REFERENCES**