Can we screen for G6PD deficiency using a POCT method?

The aim of this project was to compare G6PD analysis using a laboratory and POCT method.

Comparison between Laboratory and POCT methods for G6PD.
N= Normal, D= Deficient

		POCT	
		N	**D**
F. Spot	**N**	18	2
	D	0	10
Sensitivity		100%	
Specificity		90%	

BSH Guidelines - Laboratory diagnosis of G6PD deficiency

Evaluation of a POCT G6PD method.

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Abstract

Glucose-6-phosphate dehydrogenase (G6PD) deficiency can cause episodes of haemolytic anaemia in affected individuals who are administered certain medications or are exposed to certain foods, such as fava beans.

Avoidance of these medications is critical in avoiding haemolytic episodes and accurate G6PD analysis in the clinical laboratory is vital for managing these patients.

The availability of a POCT method could provide a cost effective way to screen for deficient individuals prior to prescribing treatment that might trigger an haemolytic event.

Methods

Comparison between the laboratory method (Trinity Biotech Fluorescent spot) and POCT method (Abbott BinaxNOW G6PD)

30 samples were analyzed, 8 EQA and 22 patient samples (G6PD requests and pooled EDTA samples).

Abbott diagnostics BinaxNOW

Trinity Biotech FS

Results

Overall, there was a good correlation between the laboratory method and the POCT method. There was 93.3% agreement (28 samples) , with the 2 samples not in consensus, both being patient samples.

The out of consensus samples both had a normal result reported with the laboratory method with a deficient result reported with the POCT method.

The POCT method has a sensitivity of 100% and specificity of 90%

Conclusion

POCT screening of G6PD has many benefits and use in hospital locations that prescribe medications that are known to trigger a haemolytic episode may be a cost effective method for screening for G6PD.

A larger study is needed to validate use by non-laboratory staff and to calculate cost-benefit of implementing at the Point of care.