Introduction

Placental growth factor (PIGF), total soluble fms-like tyrosine-kinase 1 (sFlt-1) and its placental-specific variant, sFlt-1 e15a, are biomarkers detectable within the maternal circulation that show promise for the prediction and diagnosis of preeclampsia. However, limited data exists regarding their stability within blood to inform clinical translation. This study describes the degradation of PIGF, sFlt-1 and sFlt-1 e15a within maternal serum and plasma during the 3rd trimester of pregnancy.

Methods

With consent, whole blood was collected from five participants and refrigerated at 4°C. Whole blood was then centrifuged following 1, 4, 8, 24 and 48 hours at 4°C for isolation of plasma and serum samples. PIGF and sFlt-1 were quantified using the B.R.A.H.M.S Kryptor Compact PLUS. sFlt-1 e15a was quantified using a custom enzyme-linked immunosorbent assay.

Results

PIGF, sFlt-1 and sFlt-1 e15a are stable in whole blood collected for serum and plasma isolation for at least 48 hours at 4°C. Serum and plasma performed equally well to quantify PIGF and sFlt-1, and serum performed marginally better for sFlt-1 e15a.

Conclusion

Blood samples collected for PIGF, sFlt-1 and sFlt-1 e15a analysis can be stored at 4°C for at least 48 hours before processing without impacting on analyte results, for both serum and plasma.