Some take more than a day to perform while others require expensive equipment. The agglutination method is rapid, reproducible, inexpensive and easy to perform in a laboratory with a platelet aggregometer. Because single measurements of CRP concentrations give limited information this method could be used as a screening method in the serial monitoring of at risk patients—for example, those with leukaemia or those in the neonatal intensive care unit.

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Letters to the Editor

Spurious increase in plasma potassium concentration and reduction in plasma calcium due to in vitro contamination with liquid potassium edetic acid at phlebotomy

Recently an increased number of spuriously raised plasma potassium values were noted in the routine workload of our biochemistry laboratory, an incidence of about 1 in 1000 samples. Six months previously a blood tube (Sarstedt) containing liquid potassium edetic acid anticoagulant had been introduced by the haematology department. Obvious sources of plasma contamination, such as aged samples, haemolysis, sampling from intravenous lines, and batch contamination of the lithium heparin tubes used for plasma potassium determination were excluded. It seemed plausible that the increased potassium values could have been caused by droplet transfer of liquid potassium edetic acid anticoagulant from the Sarstedt tubes to lithium heparin tubes when the latter were being filled from a syringe after phlebotomy.

To test this hypothesis 30 Sarstedt tubes containing visible droplets of liquid potassium edetic acid at their apertures and 40 lithium heparin bottles from a single batch were selected. Ten millilitres of pooled heparinised blood was drawn up into each of 40 fresh syringes. Thirty test samples were prepared by injecting 2 ml of blood from each syringe into a blood tube containing liquid potassium edetic acid, with the syringe tip resting against the side of the tube, and then dispensing the remaining 8 ml of blood into a lithium heparin bottle. Pooled blood dispensed directly from 10 fresh syringes into 10 lithium heparin bottles served as controls.

Blood in the lithium heparin tubes was analysed for potassium using flame photometry and for calcium by the o-cresolphthalein complexone dye method, which detects only non-chelated calcium and thus gives a low plasma calcium value in the presence of edetic acid.

The table shows our results. Obvious differences were noted between control and test mean plasma potassium values and mean plasma calcium values measured by the dye method.

Spurious hyperkalaemia and hypocalcaemia can clearly arise due to in vitro contamination with liquid potassium edetic acid. This may therefore be an unsuitable form of anticoagulant for clinical practice unless strict precautions are taken to prevent cross contamination.

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Table *Mean (SEM) plasma potassium and mean plasma calcium values in control and test plasma samples*

Group	*No of patient samples*	*Plasma potassium (mmol l^{-1})*	*Plasma calcium* (mmol l^{-1})*
Control	10	4·65 (0·1)	2·10 (0·08)
Test	30	5·65 (0·59) range 4·5–7·2	1·65 (0·24) range 0·83–2·02

*Plasma calcium estimated using Technicon SMA12/60 dye method (o-cresolphthalein complexone).