Haemolysis associated with haemodialysis potentially caused by kinking of dialysis lines

In July 2009, two cases of haemolysis were reported from the same unit which were definitely associated kinking of the line going into the top of the dialyser, and this alert has been previously circulated.

In January 2011, the manufacturer recalled haemodialysis lines after receiving reports of kinks that developed during dialysis. Kinks appeared to occur most commonly where the arterial line comes into contact with the blood volume monitor, although visibility sometimes may be obscured by the blood volume monitor module. The kinking may not be apparent until after the blood tubing warms. However no reports of haemolysis associated with the defective devices have been reported.

The recall included products only distributed in the United States and Canada between August and November 2010.

This cause has been previously reported in the literature (Rambausek M. et al. NDT 1995; 10: 2141-43) as has kinking of the line between the dialyser and the compliance chamber (Hudson S. et al. NDT 1993; 8: 477-479). Variation in plastics used between manufacturers or change in plastics used by manufacturers can potentially lead to increased flexibility of lines, particularly at blood temperature. Some dialysis machines have a slot on the dialyser clamp which holds the line and prevents kinking.

Action

- Units should be aware that if haemolysis occurs on a patient on haemodialysis, if water sterilisation has been excluded as the cause, then kinking of dialysis lines should be considered.
- If kinking of lines is a possibility, then this should be reported to the dialysis line manufacturers.

Please submit comments, solutions, and personal experience to:

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