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Intravenous literature: Saleem, S., Mani, V., Chadwick, M.A., Creanor, S. and Ayling, R.M. (2009) A prospective study of causes of haemolysis during venepuncture: tourniquet time should be kept to a minimum. *Annals of Clinical Biochemistry*. 46(Pt 3), p.244-6.

Abstract:

BACKGROUND: Haemolysis is defined as the release of cellular components of erythrocytes and other blood cells into the extracellular space of blood. These cellular components can cause interference in laboratory measurements, potassium being a commonly measured analyte to be affected. A number of factors have been implicated in the aetiology of haemolysis. We undertook this study to enable us to identify and hence rectify causes of haemolysis in samples from patients on acute medical and surgical wards.

METHODS: We performed a prospective study of 353 blood sampling events during February and March 2007. A proforma was used to obtain detailed information of each blood-taking episode. Information from the proforma was linked to the incidence of haemolysis obtained from the hospital computer system.

RESULTS: The incidence of haemolysis among the samples studied was 6.5%. While staff group, method of sampling, tourniquet time and number of attempts at venepuncture were each univariately associated with haemolysis, stepwise logistic regression resulted in a final model which only included tourniquet time (odds ratio for haemolysis if tourniquet time >1 min was 19.5 [95% confidence interval [CI] 5.6-67.4%]).

CONCLUSION: Tourniquet time of more than a minute is associated with a significant increase in risk of haemolysis. Advice on tourniquet time is included in phlebotomy training within the hospital; hence a campaign of appropriately channelled continuing education on this issue may be successful in reducing the haemolysis rate.

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