Preliminary evaluation of a new method for quality assurance by instant detection of hemolysed blood samples at the point-of-care
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Introduction: In a blood sample process, the preanalytical phase is accountable for a vast majority of laboratory test errors. Among preanalytical errors, hemolysis the most frequent error of sample rejection. Recollection of blood from the patient causes extra suffering, increased turn-around-time hence delayed treatment, and unnecessary extra costs for the health care system. Here we present a new method, Helge™ (hemolysis level gauge equipment), for instant hemolysis detection. Helge™ is a single use hemolysis test device that resembles a thumbtack that is attached to the blood sample in direct conjunction to its filling and within less than a minute reveals if the blood sample is hemolysed or not.

Methods: Helge™ was used on 446 acute blood samples upon their arrival to the department of clinical chemistry and the new method was compared to HI (hemolysis index) obtained from Vitros 5.1 (Ortho Diagnostics Inc.).

Results: Preliminary evaluation of Helge™ as a method to detect hemolysis show:
Specificity: 96%; Sensitivity 82% at HI50 (0.5 g/L)
Specificity: 92%; Sensitivity 96% at HI100 (1g/L)

Discussion: There are a large number of identified causes for in vitro hemolysis which makes it challenging to reduce the frequency. Here we present a new method for point-of-care detection of hemolysis, to be used as a quality assurance tool in the preanalytical phase. In this study, Helge™ lowered the frequency of hemolysis from 11% to 2% assuming that a new non-hemolysed sample was taken as a consequence of a positive test, virtually eliminating the time delay caused by hemolysis.