Poster Abstracts – IFCC – WorldLab – EuroMedLab Berlin 2011 – Berlin, 15-19 May 2011 • DOI 10.1515/CCLM.2011.514 • S481
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*Haematology*

**0568**

## MEASUREMENT OF ERYTHROCYTE SEDIMENTATION RATE (ESR) IN EDTA AND CITRATE BLOOD – COMPARISON OF VESMATIC 30, VESMATIC CUBE 30 AND VESMATIC CUBE 80 ANALYZERS

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**Background.** The erythrocyte sedimentation rate (ESR) is the most widely used laboratory test for monitoring the course of infections, inflammatory diseases and some types of cancer. Commonly, the ESR is performed in diluted citrate blood but more recent the EDTA blood is used for this test.
**Methods.** VesMatic 30 analyzer measures ESR from diluted Sodium Citrate anticoagulated blood sample. VesMatic Cube 30 and VesMatic Cube 80 measures ESR from $K_2$ or $K_3$ EDTA anticoagulated whole blood.
**Results.** Comparison study of VesMatic 30with VesMatic Cube 30 (n=196) showed Spearman's correlation coefficient ρ=0.92; Passing-Bablok linear regression: slope 0.875 (95% CI: 0.809 to 0.941) and intercept -3.125 (95% CI: -4.470 to -2.071); Bland-Altman analysis: bias (6.1) and limits of agreement (-13.5 to 25.7).
Results of comparison of VesMatic 30 with VesMatic Cube 80 (n=120) were: Spearman´s correlation coefficient ρ=0.95; Passing-Bablok linear regression: slope 1.200 (95% CI: 1.130 to 1.272) and intercept -2.200 (95% CI: -3.409 to -1.174); Bland-Altman analysis: bias (-1.8) and limits of agreement (-15.4 to 11.8).
VesMatic 30 showed slightly better correlation with VesMatic Cube 80 than with VesMatic Cube 30. Even more, VesMatic Cube 30 showed greater bias and wider limits of agreement.
**Conclusions.** VesMatic Cube 30 and VesMatic Cube 80 are reliable systems for automatic measurements of ESR in EDTA blood samples when compared to VesMatic 30. The advantages of the EDTA blood samples used for ESR measurement are avoidance of a dilution step and no need for an extra blood sample for hematology analyses.

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## DIRECT CALCULATION OF REFERENCE LIMITS FOR COMPLETE BLOOD COUNT INCLUDING WBC DIFFERENTIAL ON SYSMEX XE 2100

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**Background.** In line with different regulations, clinical laboratories have to check their reference limits.
The goal of our study was to estimate reference limits for Complete Blood Count (CBC) including WBC differential on the Sysmex XE 2100 analyser in accordance to CLSI/IFCC procedures.
**Methods.** CBC results from healthy volunteers participating in clinical trials of the SGS Life Science Services Clinical Pharmacology Unit Stuivenberg (Antwerp, Belgium) (n= 1000, 18-60 years old, 80% males and 20% females) were collected retrospectively over a time period of 12 months. We calculated reference intervals according to CLSI C28-A3 guidelines, using MedCalc and RefVal software.
**Results.** For RBC, Hb and HCT gender specific reference intervals were established.
Small differences were observed between manufacturer's and calculated reference limits for Hb (M:133 -166; F: 113-150 g/L), HCT (M: 0.40-0.49; F: 0.37-0.45 L/L), RBC (M: 4.4-5.6; F: 3.9-5.0 10E12/L), MCV (82.2-95.9 fl), MCH (27.7-32.2 pg), MCHC (31.8-35.3 g/dl), platelets (157-341 10E9/L) and monocytes (5.3-13.8%). Differences of more than 10% were found for WBC (3.7-9.2 10E9/L), neutrophils (43.3-74.0%), lymphocytes (16.1-44.3%), eosinophils (0.4-6.3%), and basophils (0.1-1%).
**Conclusions.** We established reference limits for CBC including WBC differential on the Sysmex XE 2100 platform, using a large number of reference individuals. For most parameters, calculated values corresponded well with those provided by the manufacturer; however for some parameters differences of more than 10% were observed.