

The performance of FVIII and FIX measurement in ECAT surveys

P. Meijer, ECAT Foundation, Leiden, The Netherlands

The measurement of Factor VIII (FVIII) and Factor IX (FIX) clotting activity is used for both the diagnosis of haemophilia A or B and the monitoring of treatment and therefore requires precise laboratory measurement. We evaluated the performance of FVIII and FIX measurement in surveys of the ECAT external quality assessment programme. Test results of FVIII and FIX of 175 - 215 participants were evaluated for the period 2010 – 2012. The between-laboratory variation (BCV) was assessed at different Factor VIII and FIX levels. The BCV (%) for FVIII and FIX are comparable and was > 25% for Factor VIII levels < 20 U/dL, 10 – 16% for levels > 20 U/dL and < 125 U/dL and > 15 – 25% for levels > 125 U/dL. For samples with FVIII or FIX levels > 100 U/dL significant differences between some of the most frequently used reagents were observed.

Also the clinical classification of the different samples was evaluated. For both abnormal and normal samples the percentage correct classification is very high (> 95%). Only in the intermediate range between normal and abnormal samples is a heterogeneous pattern in the classification observed.

Using a linear regression model (P. Meijer *et al.* Clin Chem 2002;48:1011-15) the long-term analytical coefficient of variation (LCVa) can be assessed. The LCVa is a measure of the long-term analytical performance of a laboratory. During the presentation the use of this model will be demonstrated with examples obtained from results of participants. The benefits of this evaluation model for quality management in the laboratory will be explained.