

International normalised ration (INR) testing in Europe: between-laboratory comparability of test results by Quick and Owren reagents

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Within the framework of the EQALM, European Committee for External Quality Assurance Programmes on Laboratory Medicine, a study was designed to obtain an overview of the analytical quality of the prothrombin time, reported as international normalised ratio (INR) and to assess the variation of INR results between European laboratories, the difference between Quick-type and Owren-type methods and the effect of using local INR calibration or not. In addition, the variation in INR results obtained for a single donation in comparison with a pool of several plasmas was assessed.

We demonstrated that the between-laboratory variation was lower in the Owren group than in the Quick group (on average: 6.7% vs. 8.1%, respectively). Differences in the mean INR value between the Owren and Quick group were relatively small (<0.20 INR). Between-laboratory variation was lower after local INR calibration (CV: 6.7% vs. 8.6%). For laboratories performing local calibration, the between-laboratory variation was quite similar for the Owren and Quick group (on average: 6.5% and 6.7%, respectively). Clinically significant differences in INR results (difference in INR>0.5) were observed between different reagents. No systematically significant differences in the between-laboratory variation for a single-plasma sample and a pooled plasma sample were observed.

On the basis of these study results we concluded that the comparability for laboratories using local calibration of their thromboplastin reagent is better than for laboratories not performing local calibration. Implementing local calibration is strongly recommended for the measurement of INR.

For further details about this study see [10.1515/cclm-2017-0976](https://doi.org/10.1515/cclm-2017-0976).

(This study will be published later this year in a special issue on Clinical Chemistry and Laboratory medicine entitled: "Harmonisation in Laboratory Medicine: The request, the sample, the measurement, and the report – an update".