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ORIGINAL PAPER

Evaluation of the analytical performances of a portable, 18-parameter hemometric system using capillary blood samples for blood donor enrolment

L. Pierelli¹, F. Zennaro¹, D. Patti², M. Miceli¹, P. Iudicone¹ & E. Mannella¹

¹ Immunohematology and Blood Transfusion Department Roma Ovest, S. Camillo Forlanini Hospital, Rome, Italy

² Horiba ABX Italia, Rome, Italy

Correspondence to Luca Pierelli, Immunohematology and Blood Transfusion Department Roma Ovest, S. Camillo Forlanini Hospital, Italy
E-mail: luca.pierelli@tiscali.it

KEYWORDS

blood donations • capillary blood counts • portable blood cell analyzer

ABSTRACT

Background and Objectives Blood donor enrolment process is frequently based on the sole capillary haemoglobin (Hb) evaluation while platelet donors by apheresis also requires platelet (Plt) count. The 'sole Hb' approach prevents a complete donor evaluation and does not allow Plt donor enrolment. To extend blood counts before donations, we evaluated the performances of a multiparametric counter using capillary blood.

Materials and Methods The ABX Micros 60 (Micros 60) blood analyzer was employed on capillary blood and compared with venous counts by a reference counter (Coulter AcT 5diff) in a first series of 416 donors and in a second series of 136, after a 3-month period of routine use of this study counter. An average of 50 µl of capillary blood was collected whose 10 µl had been aspirated by Micros 60.

Results High correlations were found between capillary counts using Micros 60 and venous counts using the reference counter. Mean Plt counts differed of $37 \times 10^9/l$ less for capillary approach in the first series of comparisons, but decreased to $10 \times 10^9/l$ less in the second series due to a greater expertise of operators in capillary sampling. All other parameters were accurate and never reached clinical relevance albeit they showed statistically significant differences.

Conclusion Data on Micros 60 demonstrated that capillary predonation counts may represent a feasible and effective approach to realize an accurate enrolment process of blood and Plt donors.

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