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**Performance evaluation of the CellaVision DM96 system: WBC differentials by automated digital image analysis supported by an artificial neural network.**

[Kratz A](#), [Bengtsson HI](#), [Casey JE](#), [Keefe JM](#), [Beatrice GH](#), [Grzybek DY](#), [Lewandrowski KB](#), [Van Cott EM](#).

Department of Pathology, Division of Laboratory Medicine, Massachusetts General Hospital, Boston, MA 02114, USA.

We evaluated the CellaVision DM96 (CellaVision AB, Lund, Sweden), an automated digital cell morphology and informatics system for peripheral blood smears. Technologists agreed with 82% of the instrument's preclassifications. Correlation coefficients between final results released from the CellaVision and results obtained by direct microscopy were 0.96 (all neutrophils), 0.94 (lymphocytes), 0.88 (segmented neutrophils), 0.73 (eosinophils), 0.69 (bands), and 0.67 (monocytes). After correction for statistically and clinically insignificant variations, the CellaVision DM96 had 95% sensitivity and 88% specificity for immature myeloid cells. It was 100% sensitive and 94% specific for blasts, and 100% sensitive and 97% specific for unusual WBCs and nucleated RBCs. Advantages of the CellaVision DM96 over direct microscopy include the ability to review slides from a remote location, consultation and quality control on a cell-by-cell basis, and potential labor savings.

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