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Automatic analysis of normal bone marrow blood cells using the XE-2100 automated hematology analyzer

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The bone marrow aspiration test conventionally has been performed by visual methods, using a light microscope, because automatic blood cell analyzers cannot adequately capture erythroblasts and immature granulocytes (IGs) (Tatsumi et al.: *Osaka City Med J* 1988;34:135-146; Tatsumi et al.: *Am J Clin Pathol* 1986;86:50-54). With the development of the XE-2100 automatic blood cell analyzer (Sysmex Corporation, Kobe, Japan) in 1999, the classification of erythroblasts and IGs by means of flow cytometry (Zini et al.: *Infus Ther Transfus Med* 2001;28:277-279; Briggs et al.: *Sysmex J Int* 1999;9:113-119) became possible. In the present study we classified cells in 65 bone marrow aspiration specimens by the microscopic method and with the XE2100, and compared the results. A good correlation was found in the nucleated red blood cell (NRBC), white blood cell (WBC), and total nucleated cell (TNC) counts; the myeloid/erythroid ratio (M/E ratio); neutrophils, lymphocytes, eosinophils, and IGs in the immature myeloid information (IMI) channel; and the total cell count. These items can all be analyzed in about 54 sec with the XE2100, which is faster than with the microscopic method. Therefore, analysis of bone marrow aspiration specimens with this apparatus appears to be very useful for clinical screening as well as laboratory testing. Copyright 2003 Wiley-Liss, Inc.

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