

The first classification of acute myelogenous leukemia

Marshall A. Lichtman

Department of Medicine and the James P. Wilmot Cancer Institute, University of Rochester Medical Center, Rochester, NY, USA

E-mail: marshall_lichtman@urmc.rochester.edu

<https://doi.org/10.3324/haematol.2024.287222>

©2025 Ferrata Storti Foundation

Published under a CC BY-NC license 



TITLE Classification of the acute leukaemias.

AUTHORS David Galton and John Dacie.

JOURNAL *Blood Cells*. 1975;1:17-24.

When neoplasia originates in the multipotential hematopoietic progenitor cell, the ensuing disordered pathological differentiation and maturation can result in a panoply of morphological variants of acute myelogenous leukemia (AML). The normal hematopoietic multipotential cell has the intrinsic capacity to differentiate into varied lineages (e.g., erythroid, neutrophilic, eosinophilic, basophilic, monocytic, megakaryocytic, myeloid dendritic) and mature to various levels in each lineage. In AML, this capability is retained, albeit in a pathological and unpredictable manner. This remarkable array of leukemic phenotypes was baffling to hematologists even into the late 1960s.^{1,2} It cried out for a unifying theme, which would recognize the underlying pathophysiology.

In the early 1970s, David Galton³ and John Dacie⁴ brought forward a rational proposal to deal with the variable morphological expression of a multipotential hematopoietic progenitor neoplasm, encompassed by the term “acute myelogenous leukemia”. Their classification of the acute leukemias was first presented in the fall of 1974 at a blood cell club meeting at L’Institut de Pathologie Cellulaire in Le Kremlin-Bicêtre, a commune on the southern border of Paris. Periodically, the Director of the Institute, Marcel Bessis, brought together a group of leading experimental hematologists from Europe, the United States and several other countries to his Institute to discuss hematology topics. Galton’s presentation at the meeting in 1974 was the basis for the first modern classification of AML and was published in the first issue of the journal *Blood Cells* in 1975.⁵ The new journal had not yet been listed in a citation database and, thus, the paper has been lost to posterity. The core of the hematologists who would compose the

French-American-British (FAB) group had attended the blood cell club meeting. They saw the value of Galton’s proposal. They, subsequently, validated, appropriated, published and marketed it. This proposal served as the first modern classification of AML.⁶ Its origin was evident in that Galton and Dacie’s paper was the only citation in the FAB publication.⁶ Galton was relegated to the fifth author as the FAB group had decided to list the authors by alphabetical order of the first letter of their surnames. Galton was, however, shown as the corresponding author.⁶ The proposed classification was published, appropriately, in the *British Journal of Haematology* founded in 1955 by John Dacie.

The Galton (FAB) classification of AML served as the principal approach to classification until it was replaced by the World Health Organization (WHO) classification. The advance in describing the human genome allowed the incorporation of genetic data as well as morphological data and provided therapeutic and prognostic implications in many cases in the WHO classification.

Galton’s classic paper has been lost to posterity. Bessis was responsible for bringing this group of hematologists together and his establishment of the journal *Blood Cells* was the result of the *Nouvelle Revue d’Hematologie Française* refusing to publish any more of the proceedings of his blood cell club meetings in English. The history of Bessis’s blood cell club meetings and the events leading to the classification of acute leukemias and myelodysplastic syndromes have been published, recently.⁷

Disclosures

No conflicts of interest to disclose.

References

1. Boggs DR, Wintrobe MM, Cartwright GE. The acute leukemias. Analysis of 322 cases and review of the literature. *Medicine (Baltimore)*. 1962;41:163-225.
2. Dameshek W. The DiGuglielmo syndrome revisited. *Blood*. 1969;34(5):567-572.
3. Richmond C. David Abraham Goitein Galton. *BMJ*. 2007;334(7594):642.
4. Lewis M, Mollison P, Weatherall D. Sir John Vivian Dacie. 20 July 1912–2 February 2005. *Biogr Mem Fell R Soc*. 2008;52:67-82.
5. Galton DAG, Dacie JV. Classification of the acute leukaemias. *Blood Cells*. 1975;1:17-24.
6. Bennett JM, Catovsky D, Daniel MT, Flandrin G, Galton DA, Gralnick HR, Sultan C. Proposals for the classification of the acute leukaemias. French-American-British (FAB) co-operative group. *Br J Haematol*. 1976;33(4):451-458.
7. Lichtman MA. The 50th anniversary of *Blood Cells, Molecules and Diseases*, 1975-2024. *Blood Cells Mol Dis*. 2024;108:102854.