Images from the Haematologica Atlas of Hematologic Cytology: precursor lymphoid neoplasms, cytochemistry and immunocytochemistry

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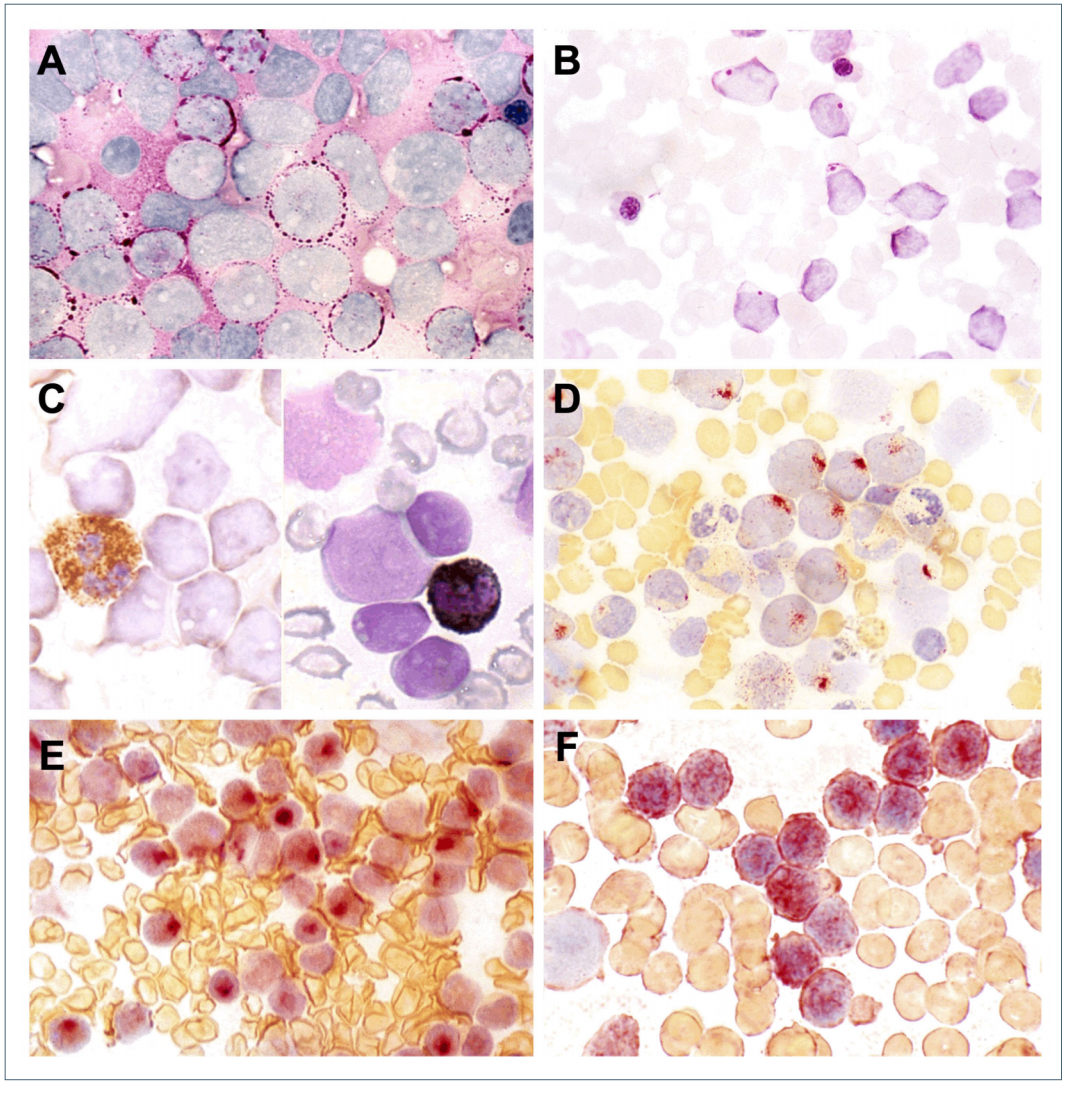

In the absence of signs of morphological differentiation, the lineage of acute leukemia blasts can be assessed by cytochemistry, flow-cytometry or immunocytochemistry. The cytochemical features of acute lymphoblastic leukemia are shown in the Figure. Most lymphoblasts reveal strong periodic acid Schiff (PAS) staining with granules arranged in perinuclear rings (A) or large, sometimes single, cytoplasmic blocks of glycogen (B). Differently from myeloblasts, lymphoblasts are negative for the peroxidase (C, left) and Sudan black (C, right) reactions; note also the strong cytoplasmic positivity of neutrophils for both reactions in panel (C). T-lymphoblasts, differently from B-lymphoblasts, are characterized by focal acid phosphatase reactivity, due to the enzyme localization in the Golgi zone (D), and also by strong, localized, paranuclear dipeptidyl aminopeptidase IV (DAP IV) activity (E). Nuclear terminal deoxynucleotidyl transferase (TdT) may be detected by immunocytochemistry in both B-lineage (F) and T-lineage lymphoblasts.[1]

Disclosures

No conflicts of interest to disclose.

Reference

1. Invernizzi R. Precursor lymphoid neoplasms. Haematologica. 2020;105(Suppl. 1):127-138.