

## Rare synchronous co-existence of acute myeloid leukemia and hairy cell leukemia in a same patient

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### **Introduction**

Acute myeloid leukemia (AML) is a myeloid malignant hematological disorder. Hairy cell leukemia (HCL) is a rare B-lymphocyte proliferative disorder. Co-existence of AML and HCL in a same patient is rare. The development of AML after CHL treatment, especial purine analogs, such as pentostatin (2'-deoxycoformycin) and cladribine, has been described in 14 cases. While the synchronous development of AML and CHL in a same patient was report only in one case. Here we reported another one. This is a 78-year-old man who presented with pancytopenia. Bone marrow smear showed 58% myeloblasts and 15% hairy cells. Immunophenotype of bone marrow mononuclear cells confirmed two groups. Cells of group A were CD34<sup>++</sup>, CD117<sup>++</sup>, CD33<sup>++</sup>, CD13<sup>++</sup>, CD123<sup>++</sup>, HLA-DR<sup>++</sup>, and CD7<sup>+</sup>, while cells of group B were CD123<sup>++</sup>, CD22<sup>++</sup>, CD20<sup>++</sup>, CD19<sup>++</sup>, cCD79a<sup>++</sup>, CD11c<sup>++</sup>, CD103<sup>++</sup>, CD25<sup>++</sup>, cKappa<sup>+</sup>, and HLA-DR<sup>+</sup>. By exon sequencing typical mutations, including SRSF2P95H, BRAFV600E, IDH1R132C, ASXL1Y591X, TET2 T1983Nfs\*30, NRAS K42R, and NOTCH3 P167S, were detected. Thus the patient was diagnosed as AML and HCL. We reported a very rare case with synchronous development of AML and HCL.

**Keywords:** Acute myeloid leukemia, Myeloblasts