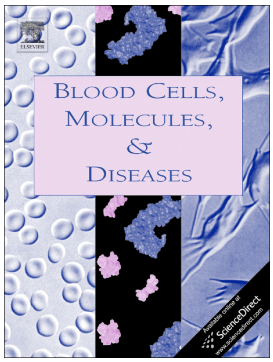

Clinical characteristics of acute promyelocytic leukemiawith the STAT5B-RARA fusion gene

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Clinical characteristics of acute promyelocytic leukemiawith the STAT5B-RARA fusion gene

Keywords: acute promyelocytic leukemia; STAT5B-RARA; drug resistance; gene fusion

To the editor: Acute promyelocytic leukemia (APL) takes up 10-15% of all acute myeloblastic leukemia patients. It is accepted by us all, that the commonest gene fusion of APL is the t(15;17) rearrangement which accounts for approximately 98% of the total[1]. This rearrangement causes a retinoic acid receptor alpha (RARA) gene fuses with the promyelocytic leukemia (PML) gene, giving the retinoic acid a target domain to attach with, which leads to the differentiation and death of leukemia cells. However, while the study got further, some new fusion genes were discovered, and according to the sensitivity to all-trans-retinoic acid (ATRA) during the treatment, those fusion genes can be devided into ATRA-sensitive group, including RARA fuses with PML, NPM and NuMA; And ATRA-insensitive group, including ZBTB16-RARA, STAT5B-RARA and PLZF-RARA[2]. Among these fusion genes, STAT5B-RARA-positive APL is one of the rarest type, which also shows remarkably gender preference to male (only one in the ten reported cases was female). Here, we report a new female case of APL carrying the aberrant STAT5B-RARA fusion transcript.

A 28-year-old Chinese female patient was admitted to our hospital due to ecchymosis on both of her lower extremities for one and a half months, on 21th October 2015. Initial complete blood counts showed a white blood cell count (WBC) of 1.95×10^{9}/L, red blood cell count (RBC) of 3.81×10^{12}/L, hemoglobin (Hb) of 109g/L and platelet count (Plt) of 196×10^{9}/L. The coagulation test showed: thrombin time (TT) 33.8s, international normalized ratio (INR) 1.48, fibrinogen degradation product (FDP) 48.8ug/ml, fibrinogen, 0.27g/L, prothrombin time (PT) 17s, D-Dimer, 24.19mg/L. The bone marrow smear exposed marked hypercellularity of 84.1% abnormal promyelocytes. Flow cytometric analysis revealed APL cells positive for