Antigen expression pattern of acute promyelocytic leukaemia cases in Malaysia

ABSTRACT

Introduction: Acute Promyelocytic Leukaemia (APL) is associated with devastating coagulopathy and life threatening condition which requires immediate medical attention. It is crucial to establish an expedited diagnosis as early therapeutic intervention has led to optimal patient management. In this study, we assessed the type and frequency of antigen expressions in APL and correlated these findings with genetic studies. Methods: Multiparametric immunophenotyping was performed on 30 samples and findings were correlated with karyotypes, FISH for t(15;17) translocation and RT-PCR for PML-RARα for detection of breakpoint cluster regions (bcr1,bcr2 and bcr3). Results: On SSC/CD45, APL cells displayed high to moderate SSC, with the expression of CD33 (100%), CD13 (96.8%), cMPO (71%) but lacked CD34 (3.2%) and HLA-DR (9.7%). Aberrant expression of CD4 was seen in 12.9% and CD56 in 6.5% of the cases. A significant association between cumulative aberrant antigen expression and bcr1 were observed bcr1 ($X2(2)$ =6.833,p<.05). However there were no significant association seen in bcr2 and bcr3; ($X2(2)$ =.199,p>.05) and ($X2(2)$=4.599,p>.05) respectively. Conclusions: Flow cytometry is a rapid and effective tool in detecting APL. It is interesting to note that there is significant association between cumulative aberrant antigen expression and genotype analysis. Further validation is required to corroborate this relationship.