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## **The role of immunophenotyping in the management of ALL**

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**Aims:** To describe the role of immunophenotyping in the diagnosis, prognosis and continued monitoring of minimal residual disease (MRD) in ALL.

**Impact:** If untreated, ALL is thought to be amongst the most fatal cancers. Nonetheless, it is also one of the most curable cancers. Quick treatment of appropriate intensity is essential in battling this disease. Due to the almost immediate availability of results from flow cytometry, immunophenotyping allows instant diagnosis which in turn permits rapid initiation of treatment.

**Method:** A literature search was conducted using several bibliographic databases including MEDLINE and The Cochrane Central Register of Controlled Trials. Search terms such as 'Immunophenotyping', 'Tumour markers', 'Diagnosis', 'Prognosis', 'Minimal Residual disease' were combined using the Boolean operators AND/OR. After exclusion, nine studies were included.

**Conclusions:** Immunophenotyping allows identification of call markers characteristic of ALL. Similarly, in the prognosis of ALL and the monitoring of MRD, immunophenotyping allows scientists to identify high-risk markers, allowing risk-stratification to occur and permit the provision of treatment that is of appropriate intensity. Treatment response in patients can also be monitored.

**Discussion:** The limitations include the cost of the flow cytometer and the complicated method of analysing the results of cytometry. These factors halt its use in actual clinical practice. Researchers should aim to use cheaper materials when manufacturing these cytometers. They should provide sufficient training to clinicians on how to interpret flow cytometry readings. If this is not a viable solution then the creation of a flow cytometer that is more user-friendly should be explored.

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**Notes:**