Introduction and Aim of the Work

Acute lymphoblastic leukemia (ALL) is the most common malignancy of childhood ALL and accounts for about 97% of all childhood acute leukemias, 75% of all childhood leukemias, and nearly one-third of all cancers of the pediatric age ***(Lanzkowsky, 2011)***.

Starting from the middle of the last century, optimal use of the few antileukemic agents already available at that time, together with improved skills in patient stratification and better supportive therapy produced a steady improvement in treatment outcome, so that the current cure rate is now about 80% ***(Pui et al., 2006).***

Risk-based treatment assignment is utilized in children with ALL so that those children who have a very good outcome with modest therapy can be spared more intensive and toxic treatment, while a more aggressive, thus more toxic, therapeutic approach can be provided for patients who have a lower probability of long-term survival ***(Carroll et al., 2003).***

Prognostic features play a critical role in directing therapy for ALL, for example, the immunophenotyping of the lymphoblast (the most common being B-precursor, followed by T-cell, and finally mature B-cell) was a highly significant prognostic feature through stratifying patients into various risk groups, but with the evolution of intensive chemotherapy and changes in treatment strategies patients with poor prognosis are now almost equivalent to the patients with good prognosis ***(Reiter et al., 1992).***

There are several chromosomal abnormalities which are very important predictors, such as numerical chromosomal changes which can affect the classification of severity of these types and make changes in the treatment strategies ***(Trueworthy et al., 1992).***

It has also been demonstrated that the frequency with which chromosomal abnormalities are observed varies among populations, in the Hindu population, hyperdiploidy infrequent (15%), in contrast with the high frequency of hypodiploidy (38.4%); this behavior has been attributed to unknown ethnic differences and geographic factors ***(Amare et al., 1999).***

AIM OF THE WORK

The aim of this work is to define clinical or biological features associated with the risk for treatment failure for children with acute lymphoblastic leukemia, and the relationships between pretreatment characteristics, induction measurements and obtaining an initial and continuous complete remission.