Recent Results in Cancer Research

Lymphoid Neoplasias I

Classification Categorization Natural History

Edited by
G. Mathé M. Seligmann M. Tubiana

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Part I

Current Morphologic Categorizations

Lymphomas We Must Classify

L. H. Sobin

Lymphomas we must classify
  By rubrics with codes and in lists.
The reason I'm sure you know why
  Clear thinking it seems to assist.

It helps when assessing the rates,
  Causes, effects, and raw data,
Comparing prognosis and fates,
  And whether the treatment does matter.

But when I relate to my friends,
  In a language I learned in my youth,
We find ourselves at our wit's ends
  Cause we cannot arrive at the truth.

For what I once thought lymphocytic,
  A form of malignant lymphoma,
I find someone calls centrocytic,
  Another hematosarcoma.

Lymphomas of histiocytes,
  I am sure we have all used the name,
Today several say is not right,
  But the tumor must still be the same.

Separating on differentiation
  Was once well-accepted by all,
But now cellular transformation
  Makes one group use large mixed and small.

There are those who eye nuclear form,
  Cleaved, convoluted, and round.
Follicular structure's the norm
  Perhaps here the basis is sound.

Some fear old terms dear and quite classic
  Imply they're no longer of use,
Prefer words like germinoblastic
  Follicular tumor diffuse.

It's a problem for all labs and nations
  To seek now a language that's one,
Agree on a classification,
  Until that our work is not done.

Integration of Modern Data in WHO Categorization of Lymphosarcomas. Its Value for Prognosis Prediction and Therapeutic Adaptation to Prognosis

G. MATHÉ

There is no real simplicity
There are only simplifications
L. P. FARGUE

Many classifications of hematosarcomas or malignant non-Hodgkin's lymphosarcomas have been proposed [3, 9, 16, 17, 23, 20, 29]. Some are still used, mainly that of Rappaport [29], which were conceived before the establishment of the concept of lymphocyte transformation by antigen(s) into large pyroninophilic cells (Fig. 1), which were confused with "histiocytes" before this concept and have been called immunoblasts by DAMESHEK [7]. The recent availability of immune and/or cytochemical markers (Fig 2) able to recognize T- and B- and so-called null lymphocytes (Table 1) [6,13, 31, 36, 38] have not only subtracted from the so-called

Table 1. T- and B- immune markers

Markers	T	B
Immune	Sheep red blood cell rosette forming assay + [13.38]	Ig secretion demonstrated by immunofluorescence assays [see 31], by immunoperoxidase [36] ?
Cytochemical	Acid phosphatase activity + [6]	

histiocytic tumors, the immunoblastic lymphosarcoma [22], but also mycosis fungoides which have been shown to be a T-lymphosarcoma [18]. Hence, the field of histiocytic sarcomas has been restricted and may be still further restricted if not suppressed in the future when we are able to identify the tumors composed of reticulum and/or dentritic cells, such as the cells recently studied by STEINMAN et. al. [33,34,35]. For this reason, the WHO Reference Center for the Classification of Neoplasias of Hematopoietic and Lymphoid tissues [23] has decided to use the term reticulosarcoma to designate the sarcomas of so-called mononuclear phagocytes, according to a WHO monograph [37] because it is historical [26] and because there is no proof that the cells which constitute this tumor in a strict sense are not reticulum cells and/or dentritic cells. Simultaneously, the fields of lymphosarcomas in a broad sense have been extended not only by the inclusion of the above-mentioned immunoblastic lymphosarcomas [22] and mycosis fungoides [18], but also by that of plasmocytic and lymphoplasmocytic lymphosarcomas [16, 17] (Table 2). However, if the old term lymphosarcoma is now justified by the immune categorization, we cannot pretend to use it always in a strict sense, as there are tumors composed of cells which do not carry the markers of differentiated T or B cells which are called null (Table 2) and the prognosis of which is better than that of T- or B-lymphosarcomas [1]. A cytochemical marker of certain populations of prothymocytes (the terminal deoxynucleotidyl transferase) [28] and immune markers of pre-B-lymphocytes [4, 14, 30] will show us soon if all such null cell tumors (Table 2) are composed of precursors of lymphocytes, hence are really lymphosarcomas, or if there are sarcomas of undifferentiated stem cells.

The purpose of this paper is to discuss the three most *common types* of lymphosarcomas as far as their nomenclature and subtyping, especially with immune markers, are concerned. They are called in WHO nomenclature [23]: 1) prolymphocytic (centrofollicular), nodular, or diffuse, 2) lymphoblastic, and 3) immunoblastic. The correlation between this adapted WHO

categorization and prognosis, and hence its value for therapeutic indications, will be shown. This nomenclature is based on the simplistic concept shown on Table 3 which has not been disproved by recent data. It does recognize several steps of differentiation: 1) one comprising cells, deriving from undifferentiated stem cells and engaged in lymphoid differentiation, which

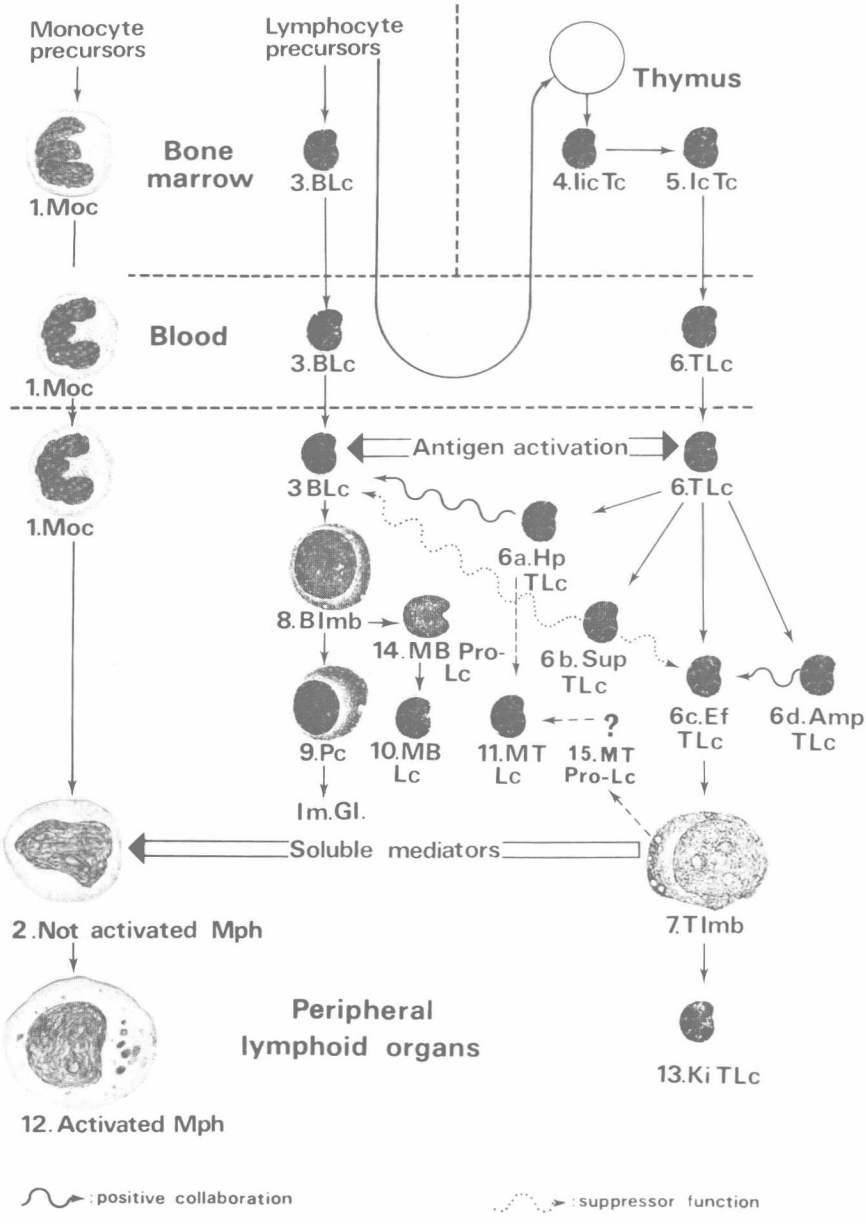

Fig. 1. Known morphologic correspondences to some functional steps of mononuclear cells. Not activated and activated macrophages are also called histiocytes. They should not be confused with reticulum cells and/or dendritic cells which may not be macrophages [33, 34, 35]