1er Forum Tunisien de Biologie Médicale

LABORATOIRE CMNN MONASTIR

Polyclonal B-cell lymphocytosis with binucleated lymphocytes (PPBL): a case report

PN°: 216

I. Karaa (1), N. Slama (2), O. layeb (1), M. Ghileb (1), M. Harrabi (1), L. Khefacha (1), X. Troussard (3), A. Laatiri (2), M. Sassi (1)

(1) Laboratory department, Monastir maternity and neonatology center, Tunisia

(2) Hematology department, Monastir maternity and neonatology center, Tunisia

(3) Hematology laboratory, Caen university hospital, France

BACKGROUND

- ✓ Chronic lymphoproliferative disorders (CLPD) are a heterogeneous group of diseases characterized by clonal expansion with an accumulation of mature-appearing lymphocytes, and defined as a sustained increased in peripheral blood lymphocytes of 4× 10^9/L or more for longer than 6 months without a clear etiology.
- ✓ Lymphocytes tend to be monomorphic in malignant diseases in contradiction to the pleomorphic lymphocytes in reactive causes.
- ✓ Atypical cytological and immunophenotyping profiles may be observed and lead to diagnosis difficulties.

CASE REPORT

- 58 years old **male** patient
- **Heavy smoker** (60 pack-year)
- **Medical history:** high blood pressure and type 2 diabetes
- **Reason for consultation** : a persistent lymphocytosis associated with anemia

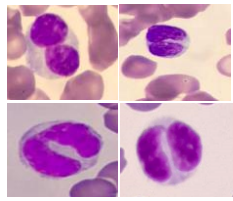

Figure 1 : circulating binucleated lymphocytes

Laboratory findings :

1. **CBC :** Hyperleukocytosis (16590/mm^3) made essentially of lymphocytes (9530/mm^3) & normocytic anemia (Hb= 9.4 g/dL, MCV= 86.9 fl).
2. **Blood smear :** Polymorphous lymphocyte population including many **binucleated lymphocytes (Figure 1)**.
3. **Flow cytometry:** Expansion of **B-cells** (absolute count= 5.2 × 10^9/L), CD19+ FMC7+ CD79b+ CD22+ CD 11c+ CD43+.

   B lymphocytes showed an **expression imbalance** in favor of the lambda chain ➔ a minority circulating B lymphoid clone.
4. **OMB :** presence of lymphoid clusters, whose microscopic and immunohistochemical aspects suggest a reactionary nature.

➔ **Polyclonal B-cell lymphocytosis with binucleated lymphocytes**

DISCUSSION

- ✓ PPBL is a rare and recently described entity. It is diagnosed predominantly but not exclusively in women, usually smokers.
- ✓ A polyclonal serum IgM is also associated and HLA-DR7 expression is present in most cases. Contrary to B-cell chronic lymphoproliferative disorders, peripheral B cells are polyclonal with kappa and lambda light-chain expression and no clonal rearrangement of immunoglobulin heavy chain genes is usually demonstrated **[1].**

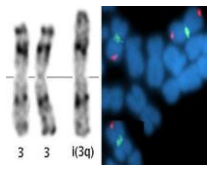

Figure 2 : Partial karyotype and FISH showing +i(3q)

- ✓ The detection of an extra isochromosome for the long arm of chromosome 3 +i(3)(q10) has to be considered as a specifi c marker of PPBL **(Figure 2) [2]**.
- ✓ PPBL evolution is benign in most cases, but non-Hodgkin's lymphomas and solid tumors (pulmonary blastoma) were previously and rarely describe

CONCLUSION

PPBL is characterized by persistent and stable lymphocytosis with binucleated lymphocytes on peripheral blood smears. Considering its rarity and the fact that it's not listed in the WHO classification of the CLPD, PPBL remains an entity to explore.

REFERENCES

[1] : Trouusard and al Polyclonal B-cell lymphocytosis with binucleated lymphocytes (PPBL) 2008

[2] : Bauchu and al; Distinct chromosome 3 abnormalities in persistent polyclonal B-cell lymphocytosis