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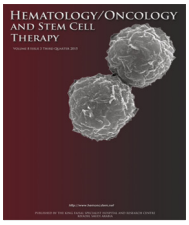

LETTER TO EDITOR

Prevalence and relative proportions of CLL and non-CLL monoclonal B-cell lymphocytosis phenotypes in the Middle Eastern population

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Chronic lymphocytic leukemia (CLL) is considered more common in Western countries, and its incidence is believed to decrease moving east across the globe. Therefore, the prevalence of monoclonal B-cell lymphocytosis (MBL), a pre-CLL condition, is also expected to be less common in non-Western countries. MBL [1] is characterized by the presence of $<5000 \times 10^9$/L circulating clonal B cells that can be $CD5^+$ or $CD5^-$. In Western countries, MBL prevalence as detected by flow cytometry varies from 0.6% to 14% in healthy individuals >40 years of age, dependent upon the level of sensitivity and number of parameters applied. Using four- to six-color flow cytometry, most studies report a prevalence of ~5% in the Western population, with the CLL phenotype about five-fold more prevalent than the non-CLL phenotype. It is important to distinguish this entity from overt CLL as the elderly population expands and flow-cytometric immunophenotyping increasingly provides higher levels of detection. More individuals are incidentally found to have MBL [2]. A review of the current literature indicated that, although most cases of CLL are preceded by MBL, only 1–2% may progress to CLL requiring therapy [3]. The epidemiologic and genetic factors associated with MBL contributing to progression to CLL are not properly identified. MBL also carries an identical frequency of cyto-

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genetic abnormalities as that observed in CLL, but it has yet to be defined whether any subgroup can predict progression to CLL [3,4]. MBL has been classified as MBL with a CLL-like phenotype, MBL with an atypical CLL phenotype, and MBL with a non-CLL phenotype [5]; however, MBL incidence and relative proportions of CLL phenotype versus non-CLL phenotype have not been adequately studied in non-Western countries. We investigated the prevalence and phenotype of MBL in a population sample in the Middle East (King Faisal Specialist Hospital & Research Center, Riyadh, Saudi Arabia). The study was approved by the institution office of research affairs.

Individuals (365) mostly consisting of Saudi Arabian nationals and a smaller number of individuals from neighboring countries and >50 years of age were studied. Additionally, these patients exhibited normal peripheral blood counts and no evidence of hematologic disease. Peripheral blood samples were immunophenotyped by eight-color flow cytometry to detect CD45, CD19, CD20, CD5, CD10, CD3, and kappa and lambda light chains based on acquiring ~1 million cells each.

Monoclonal B cells were detected in 21 (6%) individuals (14 male, 7 female; median age: 70 years; range: 64–91). However, only 10 of these cases (48%) displayed the typical $CD19^+/CD5^+$ CLL phenotype. Two cases (9.5%) displayed $CD5^-$ clonal B cells, and two cases (9.5%) displayed $CD10^+$ clonal B-cells. The remaining seven cases (33%) showed a concomitant $CD5^+$ and a $CD10^+$ clonal population, both expressing the same light chain. While we cannot be certain that these $CD5^+$ and $CD10^+$ cell populations represent the same or different clones, the finding that the two populations in all seven cases showed the same light-chain restriction supports that the two populations represented the same clone.

In conclusion, MBL in the Middle Eastern region observed in this study was as common as that reported in Western countries. Compared with Western countries, however, it is the non-CLL phenotype which was more prevalent here, comprising 52% of our MBL group, with most of these cases showing cells expressing CD5 and CD10. The exact classification of these cases is difficult, and it appears likely that they represent marginal-zone phenotypes; however, the possibility of a coexisting follicular-lymphoma clone cannot be excluded. Pure follicular-lymphoma phenotypes are observed in 10% of our MBL cases. Further studies with long follow-up are needed.

Conflicts of interest

The authors have no conflicts of interest to declare.

References

[1] Parikh SA, Kay NE, Shanafelt TD. Monoclonal B-cell lymphocytosis: update on diagnosis, clinical outcome, and counseling. Clin Adv Hematol Oncol 2013;11:720–9.
[2] Siddon AJ, Rinder HM, Education Committee of the Academy of Clinical Laboratory Physicians and Scientists. Pathology consultation on evaluating prognosis in incidental monoclonal lymphocytosis and chronic lymphocytic leukemia. Am J Clin Pathol 2013;139:708–12.
[3] Mowery YM, Lanasa MC. Clinical aspects of monoclonal B-cell lymphocytosis. Cancer Control 2012;19:8–17.
[4] Landgren O, Albitar M, Ma W, Abbasi F, Hayes RB, Ghia P, et al. B-cell clones as early markers for chronic lymphocytic leukemia. N Engl J Med 2009;360:659–67.
[5] Matos DM, Falcão RP. Monoclonal B-cell lymphocytosis: a brief review for general clinicians. Sao Paulo Med J 2011;129:171–5.

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