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# LETTER TO THE EDITOR - MYC DEREGULATION IN B-CELL CUTANEOUS LYMPHOMAS

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Cutaneous lymphomas are a heterogeneous group of malignant neoplasms constituted by lymphoid cells, originating primarily in the skin. Most cutaneous lymphomas are T-cell neoplasms, while B-cell lymphomas are rare[1]. Some primarily cutaneous B-cell lymphomas with specific clinical, biological and molecular features are defined and include primary cutaneous marginal zone lymphoma (PCMZL), primary cutaneous follicle-center cell lymphoma (PCFCL), and diffuse large B-cell lymphoma, leg type (PCDLBCL, LT)[2]. Nevertheless, other B-cell neoplasms may primarily originate in the skin, including diffuse large B-cell lymphoma (DLBCL), B-cell lymphoblastic lymphoma and others[3,4]. Although the exact pathogenesis of cutaneous neoplasms is not fully understood, some molecular alterations have been defined for prognostic and predictive purposes[5]. Among these, MYC deregulation seem to play an important role in a significant percentage of B-cell cutaneous lymphoma, as well as already known for nodal lymphomas and other solid tumors[6]. Indeed, MYC alterations seem to be particularly frequent in DLBCL and PCDLBCL, LT. In particular, a rearrangement of MYC gene has been reported in up to 43% of PCDLBCL, LT, more often in absence of concomitant BCL2 and BCL6 translocations[7]. On the other hand, the report of MYC alterations in PCFCL and PCMZL was anecdotal. Notably, both MYC gene rearrangements and myc protein overexpression are associated with a poor outcome in cutaneous lymphomas[7]. MYC functions as a master transcriptional regulator with direct or indirect effects on almost all the cellular activities, including apoptosis, replication, differentiation and cell cycle regulation. Although translocation is the best characterized MYC molecular alteration in lymphomas, there are other complex and only partially known molecular mechanisms leading MYC deregulation. In particular, the post-transcriptional and epigenetic regulations have recently emerged as important mechanisms. The better characterization of MYC deregulation in cutaneous lymphomas may open the door to future targeted therapy, mainly in aggressive cases.

**Conflict of interest:**
The Authors declare that they have no conflict of interests

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