Short Communication

Assessment of BCL2/J(H) translocation in healthy individuals exposed to low-level radiation of 137CsCl in Goiânia, Goiás, Brazil

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ABSTRACT. Healthy radio-exposed individuals who received low levels of Cesium-137 radiation during the accident that occurred in Goiânia in 1987, their families and controls were tested for the detection of t(14;18)-rearranged B cells in peripheral blood by using a highly sensitive, real-time quantitative PCR method. The chromosomal translocation t(14;18)(q32;q21) is characteristic of follicular lymphoma and is a frequent abnormality observed in other types of non-Hodgkin’s
lymphoma. This translocation leads to constitutive activation of the
*BCL2* oncogene by the enhancers of the immunoglobulin heavy-chain
 locus. In healthy individuals, the same translocation may also be found
in a small fraction of peripheral blood lymphocytes, and positive cells
might serve as an indicator for environmental exposure to carcinogens
and possibly correlate with the cumulative risk of developing t(14;18)-
positive non-Hodgkin’s lymphoma. Twenty healthy radio-exposed
individuals, 10 relatives and 10 non-exposed healthy individuals were
tested for the detection of this translocation. Only 1 non-exposed
individual was positive for the chromosomal translocation, and healthy
radio-exposed individuals presented lower levels of cells bearing the
BCL2/J(H) rearrangement when compared to the levels of the patients
with follicular lymphoma before treatment. However, evaluation of
more cells would be required to confirm the total absence of circulating
cells bearing *BCL2/J(H)* rearrangement.

**Key words:** Cesium-137; Translocation; Lymphoma; Rearrangement;
*BCL2/J(H)*; Radiation