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Increased rate of dicentric chromosomes in French Polynesian thyroid cancer patients?

Dear Sir,

We read with great interest the article from Violot et al. entitled Evidence of increased chromosomal abnormalities in French Polynesian thyroid cancer patients (Violot et al., Eur J Nucl Med Mol Imaging 2005;32(2): 174-179.

In their study they reported a 2.9 times increase of the number of dicentric chromosomes in Polynesian patients which were followed for a differentiated thyroid cancer. Furthermore, they linked their finding to the atmospheric nuclear weapon tests carried out in French Polynesia. This issue is worth addressing but, in our opinion this causal connection needs to be questioned. We want to bring forward three major issues which were not taken into account by the authors and which cast doubt on their conclusions.

- The group of Polynesian thyroid cancer patients was compared to a group of European patients with a thyroid cancer and to a group of healthy subjects living in the Paris area. Obviously, this study is lacking adequate control groups of Polynesians in whom the spontaneous rate of dicentric chromosome must be determined. Thus it is quite possible that that the 2.9 increase of dicentric chromosomes in Polynesian patients does not exist when they are compared to control groups of Polynesians. If this were true the reasons why the Polynesians have more dicentric chromosomes than European or French would have to be determined.

- Since ionising radiation is the most effective factor associated with an increase in dicentric chromosome frequency, the authors evaluated radiation dose estimate according to a dose response-curve obtained in cells of patients living in Europe/France. Once again this evaluation does not hold because the dose response-curve should have been obtained with cells drawn on a Polynesian control group.

- The authors link their finding of an increase rate of dicentric chromosomes in comparison to European/French controls to the atmospheric nuclear weapon tests carried out in French Polynesia. it is well established that dicentric chromosomes of lymphocytes are good indicators of recent exposures to radiations (less than one year. Since the nuclear weapon tests were carried out in French Polynesia between 1966 and 1974, the current observation of dicentric chromosomes cannot be related to them.

Therefore the scope of the study of Violot et al., is quite limited and the only conclusion which can be drawn is an excess of dicentric chromosome in Polynesian patients in comparison to the European/French population. Everything else needs more documentation.

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