

Letter to the Editor

Ukraine Urinary Iodine Levels; 20 years after the Chernobyl Accident

Dear Sir;

Two decades have passed since the accident at Chernobyl nuclear power plant (Ukraine), and a marked increase in thyroid cancers among young children around this area is well known to have occurred [1]. According to a report by the World Health Organization (WHO), the overall number of thyroid cancer cases diagnosed in Belarus, Ukraine and the four most-contaminated regions of Russia during 1986–2002 among individuals who were children or adolescents (0- to 17-years-old) at the time of the accident was more than 4,000 [2]. This strongly suggests a causal relationship between internal irradiation of iodine isotope, possibly ^{131}I , and occurrence of thyroid cancer. Furthermore, moderate iodine sufficiency was suggested to exist around Chernobyl at the time of the accident, possibly representing a risk factor for increased incidence of thyroid cancer in this area, but the evidence for this is rather sketchy and somewhat inconsistent [2, 3]. Tronko *et al.* recently evaluated urinary iodine (UI) concentrations in subjects who participated in the Ukrainian-American Cohort Study, and reported median UI concentrations of 41.7 $\mu\text{g/L}$ for 1998–2000 and 47.5 $\mu\text{g/L}$ for 2001–2003 [4], concluding that UI levels remained in the level of mild-moderate deficiency in this area.

Conversely, we screened UI levels in the same areas of the former USSR, *i.e.*, around Semipalatinsk Nuclear

Testing Site in the Republic of Kazakhstan in 2002, and reported no iodine deficiency in this area, probably due to the appropriate supplementation policy using iodized salt [5]. To evaluate current iodine status around Chernobyl, we screened UI concentrations in a population residing in the Kiev region of Ukraine ($n = 107$) in 2005. In these subjects, median UI concentration was 109 $\mu\text{g/L}$, and only 10 subjects showed moderate iodine deficiency ($<50 \mu\text{g/L}$), with none showing severe iodine deficiency ($<20 \mu\text{g/L}$), according to WHO definitions. Although the number of subjects was quite limited, our preliminary results suggest that iodine status in Ukraine might be improving, probably due to supplementation with iodized salt. Long-term follow-up, including rural regions in addition to urban areas around Chernobyl, will be needed for objective evaluation of future radiation risk in this area.

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