

Preface

The population living in areas exposed to radioiodine in fallout from the Chernobyl accident has shown a significant rise in thyroid cancer, particularly in those who were children and adolescents at the time of the accident. This rise in thyroid cancer is the only scientifically proven effect of the accident on health of the local population. The temporal and geographic distribution of thyroid cancer cases diagnosed in young patients is suggestive of a common causative event, i.e. internal exposure of the thyroid gland to radioiodine. Thyroid dose per unit intake of iodine isotope is higher for children than for adults mostly due to the smaller size of the thyroid in children. The background rate of childhood thyroid cancer is very low in unexposed populations; the additional thyroid cancer incidence in young patients is therefore particularly striking.

The VP Komisarenko Institute of Endocrinology and Metabolism of the National Academy of Medical Sciences of Ukraine was a leading research center for study and treatment of thyroid diseases in Ukraine, and took a principal role in treating these patients as soon as the rise in cases became apparent. A specialized Clinical-morphological Registry of thyroid cancer of subjects at high risk was established in the Institute in 1992 and is still maintained today. The Histological archive stores pathological material from cases, most of which have been reviewed by the international experts since 1994.

The Ukrainian cases account for over 60% of the international Chernobyl Tissue Bank (CTB). For more than 70% of them matched pairs of samples from tumor and normal tissue are available. These are widely used by the leading research centers in the world to study various aspects of thyroid carcinogenesis. Recent efforts to supplement the CTB database with calculated individual thyroid exposure dose estimates have made it possible to search for markers of thyroid cancer with a radiation etiology.

Investigations performed on the same pathologically verified samples allow the comparison of the results from different projects as well as an in-depth integrative analysis.

The international team of authors of this book attempts to provide an overview of the large number of unique materials obtained from studies of Ukrainian thyroid cancer that have been accumulated over the years after the Chernobyl accident. Comprehensive scientific analysis is now expected to be useful for future studies of radiation-associated thyroid cancers.

The Editors:

*Mykola Tronko
Tetiana Bogdanova
Vladimir Saenko
Ilya Likhtarov
Geraldine Thomas
Shunichi Yamashita*