Guest Editorial

Prevention in Thyroidology

It is much better for the individual members of society to be healthy and well than to be ill or deceased. This is the main basis of health care (1).

To cope with disease, the health care system provides a range of services aimed at cure or control. A different approach to preservation of good health and longevity is the prevention of disease. The major appeal of prevention, when possible, is that it is a most effective and often also cost-effective means of reducing the burden of disease.

Prevention may take many forms, from large public programs directed at decreasing the risk for disease in healthy subjects (primary prevention), via case findings of early subclinical disease to prevent the more severe long-term consequences (secondary prevention), to prevention of complications of overt disease (tertiary prevention).

At the level of public health care, prevention has been abundantly implemented in thyroidology with nearly worldwide programs of iodine supplementation and screening for neonatal hypothyroidism. Moreover, many contacts between physician and the individual patient include aspects of prevention, such as a discussion on how to prevent progression of goiter, or on the long-term consequences of subclinical thyroid disease.

Prevention is based on knowledge of risk factors for development of disease or for progression or complication of disease. Risk factors can be identified by epidemiologic studies and the efficiency of prevention subsequently proven by controlled intervention. Often it is necessary to clarify the exposure–risk or dose–effect relation between the risk factor modified and the disease that is prevented. Such knowledge is important when correcting iodine deficiency to direct iodine intake toward the level associated with the lowest risk of thyroid disease.

When the need for prevention is identified, a decision should be made on the strategy of prevention. This might be a population strategy such as legislation on iodine fortification of all salt. Another approach is a high-risk strategy directed at certain subgroups of the population, such as pregnant women who could be encouraged to take iodine supplementation. A high-risk strategy may involve screening of subpopulations. This could be screening of elderly or pregnant women for hypothyroidism. Any program of prevention should be accompanied by monitoring risk factors and disease frequency in the population. Such monitoring is necessary to adjust the program to achieve optimal prevention.

This issue of Thyroid contains a number of reports relevant to the prevention of thyroid disease. There are reports on incidences of disease in populations and correlation to potentially modifiable environmental factors. Other papers discuss risk factors of importance in clinical practice more directly. A review on the prevention of development or worsening of thyroid ophthalmopathy may aid in guidance of the individual patient. Another paper discusses the possibility of minimizing the risk of relapse of hyperthyroidism after withdrawal of medication in Graves’ disease.

Iodine supplementation programs now cover approximately 3–4 billion people in the world, and iodine intake is a major determinant of frequency and type of thyroid disease in a population (2). New insight into iodine was given in a recent issue of Thyroid (3). Other aspects are covered in this issue, including the interplay between iodine deficiency and some other micronutrients, which may explain why low iodine intake has more severe consequences in areas of general malnutrition, and the importance of farmers feeding their cows for population iodine nutrition.

Even at levels of iodine intake not associated with developmental brain damage, nonoptimal iodine intake of the population may cause excessive thyroid disease. A report on iodine supplementation in Austria focuses on the benefits and risks of iodine supplementation at the levels of intake in Europe. The world status on monitoring of iodine intake and supplementation is reviewed with focus on the different approaches in small, decentralized Switzerland and large, centralized China.

The incidence of thyroid neoplasms varies considerably between countries, opening the possibility of identifying modifiable risk factors. Another issue discussed is economy, which is involved in evaluation of public prevention programs.

With all likelihood, the importance of prevention of thyroid disease at all levels will continue the ascending curve that started with iodine supplementation in the United States in the early 20th century, and accelerated with the implementation of screening programs for neonatal hypothyroidism in the late part of the century. Many fields of prevention of thyroid diseases need development and refinement, as mentioned in the article on prevention of thyroid diseases in the United States. Hopefully, the present focus on prevention will serve to further catalyze an advancement of this field.

References


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