

Service for Nuclear Medicine, Medical Center Zajecar

THE FOLLOW-UP OF INCIDENCE OF AUTOIMMUNE HYPER AND HYPOTHYROIDISM IN EASTERN SERBIA DURING 24 YEARS

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ABSTRACT

The incidence of Graves' disease and autoimmune hypothyroidism (atrophic and hypertrophic variant) for the last 24 years in Timok Region (Eastern Serbia) is reported. Thyroid Unit of Medical Center in Zajecar (Center of Timok Region) performed registration of all thyroid patients during the entire follow-up period. Population of the Region is approximately 300 000 people residing in seven counties. From 1981 to 1990 an average of 45 patients with Graves' disease and 15 with autoimmune hypothyroidism per year were registered; between 1994 and 1997 significant but transitory increase of Graves' disease was observed – the peak was in 1996 (155 new registered patients). Since 1998 incidence of Graves' disease was continuously decreasing. Concurrently, constant increase in autoimmune hypothyroidism is observed. The most drastic increase in autoimmune hypothyroidism is registered in this year. The number of recently registered patients (first nine months of 2003) with immunogenic hypothyroidism slightly exceeded the number of patients with autoimmune hyperthyroidism (58 vs. 52). Various factors including the effect of iodine correction implemented since 1993 (from 10 mg KI/kg to 20 mg KI/kg of consume salt) should be considered in association with this alteration of thyroid autoimmune diseases morbidity.

INTRODUCTION

Environmental (iodine content, goitrogens intake, stressful life events, smoking habits ...) and *genetic* factors are associated with thyroid morbidity (1,2,3). Follow-up of some epidemiological parameters (Incidence) may present valuable model for investigation of the factors accountable for thyroid diseases expression.

Iodine intake is one of the most important factors for expression of thyroid disease in certain area . Population in iodide deficient area suffer from goiter, hypothyroidism, mental disturbances and "more malignant" forms of thyroid carcinoma (Iodine Deficiency Disorders) while population in iodine sufficient area is more prone to autoimmune thyroid diseases (4).

Authors are presenting incidence of some thyroid autoimmune diseases (Graves' disease, Hypothyroid Hashimoto's thyroiditis and Spontaneous thyroid atrophia) for the period of 24 years. Patients migrated to this area during this period were not included in the study.

METHODS

Graves' disease was diagnosed by:

- routine clinical (diffuse goiter with hypermetabolic signs) and laboratory findings (elevated thyroid hormones) performed by standard RIA.

- FT4, FT3 and ultra sensitive TSH (DELFI A Pharmacia) or TRH test .
- 131I and 99mTc thyroid uptake and thyroid scintiscaning .
- TSH receptor antibodies TRAK - Assay, Henning (BRAHMS since 1997),
- TSAb were tested by cAMP generation in porcine thyroid cell suspension.

Hashimoto's thyroiditis was diagnosed by:

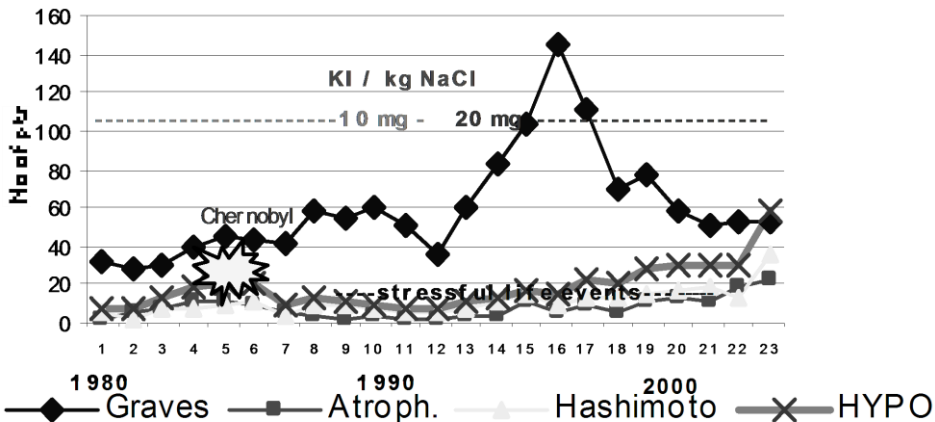
- routine clinical (small diffuse goiter, mild hypothyroid state) and laboratory findings (elevated thyrotropin hormone and TgAb, TPOAb) performed by RIA, FIA .
- 131I and 99mTc thyroid uptake and thyroid scintiscaning .
- Fine needle aspiration biopsy
- Hystopathological investigation (intra-operative)

Primary hypothyroidism was diagnosed by :

- routine clinical and laboratory findings (elevated thyrotropin, TgAb, TPOAb, and low free thyroxin) performed by RIA, FIA .
- 131I and 99mTc thyroid uptake and thyroid scintiscaning .

Thyroid diseases register Since 1970

INCIDENCE OF AUTOIMMUNE THYROID DISEASES 1980-2003



DISCUSSION

For the period of 24 years we have registered in Timok Region :

Very significant but transitory increase of incidence of Graves' disease 1994 – 1997 (5).

Slow but constant increase of incidence of autoimmune hypothyroidism (hypertrophic and atrophic variant) in the last 5 years.

Relevant factors associated with registration of incidence of thyroid diseases (diagnostic procedures, organizational schema, genetic disposition of population) were considerably constant during investigated period. Conversely, population of this region was exposed to massive alteration of some exogenous (environmental) factors (Chernobyl accident, stressful life events (war in former Yugoslavia) iodine intake correction (from 10 to 20 mg of KI/kg of salt although this area was not iodine deficient).

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