Treatment of Endemic and Sporadic Goitre

International Thyroid Symposium, October 18 – 21, 1984, Budapest

Editors

D. Reinwein, Essen FRG P. C. Scriba, Lübeck FRG

Assisted by

D. Beysel, Darmstadt FRG

With 108 Figures and 93 Tables



Contents

Welcome and Introduction. D. REINWEIN	1
A. Epidemiology and Etiology of Goitre	
Goitre Heterogeneity – A Consequence of Variable Gene Expression in Growing Human Tissue? H. GERBER, H. J. PETER, H. STUDER	5
Mathematical Model Explaining Heterogeneity and Autonomy in Goitre F. J. SEIF, D. ARMBRUSTER	13
Goitre and Iodine Deficiency in Europe – A Review. Report of the Subcommittee for the Study of Endemic Goitre and Iodine Deficiency of the European Thyroid Association P. C. SCRIBA (Chairman)	19
Is Belgium Iodine-Deficient? C. Beckers, E. Avalos, A. Noel, C. Cornette, Ph. de Nayer	43
Iodine Excretion and Goitre in 870 Styrian School Children – Investigation 20 Years after Introduction of Iodized Salt Prophylaxis in Austria. O. EBER, G. KLIMA, W. LANGSTEGER, P. LIND, W. PETEK, P. WAKONIG, O. WAWSCHINEG	45
Comparison of Thyroid Volumes in the Federal Republic of Germany and Sweden. R. GUTEKUNST, H. SMOLAREK, P. C. SCRIBA	53
Delay of Bioelectric Brain Maturation in Congenital Iodine Deficient Goitrous Hypothyroidism. P. STUBBE, F. J. SCHULTE, P. HEIDEMANN	57
The Adaptation of Fetal-Maternal Unit to Iodine Deficiency. F. Péter, F. Delange, L. Barkai, P. Bourdoux	59
Etiology of Sporadic Goitre. G. Hennemann, E. P. Krenning	61
ls Cigarette Smoking Goitrogenic? L. Hegedüs, S. Karstrup, D. Veiergang, B. Jacobsen, L. Skovsted, U. Feldt-Rasmussen	65
Increased Thyroid Volume During Phenytoin and Carbamazepine Treatment. J. P. KAMPMANN, L. HEGEDÜS, J. M. HANSEN, K. LÜHDORF, H. PERRILD, U. FELDT-RASMUSSEN	67

VIII Contents

B. Immunology and Laboratory Findings

Immunological Aspects of Sporadic Non-Toxic Goitre. R. van der Gaag, H. A. Drexhage	69
Thyroid Growth-Stimulating Immunoglobulins in Patients with Euthyroid Goitres of an Endemic Goitre Region. H. Schatz, P. Pschierer, J. A. Nickel, M. Floren, F. H. Beckmann	81
Production of Growth-Stimulating Antibodies by Intrathyroidal Lymphocytes in Euthyroid Sporadic Goitre. PM. SCHUMM, K. BADENHOOP, P. KOTULLA, A. LÜCK, H. J. C. WENISCH, K. SCHÖFFLING. K. H. USADEL, H. SCHLEUSENER	85
Impact of Laboratory Findings in the Diagnostic Approach of Goitre. G. F. Fenzi, L. Bartalena, L. Chiovato, E. Macchia, C. Marcocci, F. Pacini, P. Vitti, A. Pinchera	89
Significance of Anti-Microsomal, Anti-Thyroglobulin, and TSH-Displacing Antibodies for the Diagnosis of Thyroid Diseases. F. J. SEIF, E. GROSSMANN	99

C. Medical Treatment and Its Evaluation

Imaging Modalities for Diagnosis of Goitres. P. PFANNENSTIEL	109
Determination of the Intrathyroid Iodide Concentration in an Endemic Goitre Area Using Computerized Tomography (CT). K. JOSEPH, F. BERG-SCHLOSSER, K. HERBERT	129
Treatment of Euthyroid Goitre with Thyroid Hormones. D. EMRICH	139
Medical Treatment of Diffuse Non-Toxic Goitre. Volumetric Evaluation of Optimal Treatment. J. M. HANSEN, J. P. KAMPMANN, H. PERRILD, L. HEGEDÜS	149
Iodine Excretion – Correlation with Thyroid Function and Thyroid Volume. H. FRITZSCHE, H. HUGL, M. KARGL, P. WEISS	153
Pitfalls in Thyroid Hormone Treatment. C. R. PICKARDT	157

D. Medical Treatment I

Endemic Goitre in the GDR and Results of Thyroid Hormone Therapy of the Disease. W. MENG, S. MENG	167
Ultrasound: A Novel Tool for the Diagnosis and Follow-Up of Simple Goitre. TH. OLBRICHT, G. BENKER, D. REINWEIN	175
Treatment of Non-Toxic Diffuse Goitre with Thyroxine and Iodide. K. H. USADEL, PM. SCHUMM-DRÄGER	191

Contents	IX
Treatment of Diffuse Simole Goitre with Thyroxine and Iodide. E. OBERHAUSEN, H. P. STOLL	195
Treatment of Diffuse Simple Goitre with Iodine. B. LEISNER	203
Non-Toxic Goitre: Immunological and Metabolic Implications of Chronic Iodine Administration in Addition to Thyroxine Treatment.	
M. BOUKIS, A. SOUVATZOGLOU, D. KOUTRAS	213
E. Medical Treatment II	
The Effect of Iodide Refeeding on the Synthesis and Secretion of TSH and Thyroid Hormones in Severe Iodine Deficient Rats.	210
IH. LEMARCHAND-DERAUD, J. D. ROGNONI	219
Suppression of Delta-TSH by Thyroid Hormones in Patients with Non-Toxic Goitre and After Total Thyroidectomy. F. A. HORSTER, W. EICKENBUSCH	221
Pure Levothyroxine or Compound Preparations in the Treatment of Endemic Goitre. A. HOTZE, R. SCHMITZ, H. BONGERS, K. JOSEPH, J. MAHLSTEDT, F. WOLF	223
A Clinical Comparison of 125 μg Levothyroxine and 75 μg Levothyroxine with Additional 15 μg Triiodothyronine in the Therapy of Diffuse Goitre. H. BONGERS, A. HOTZE, R. SCHMITZ, K. JOSEPH	231
Serum Thyroglobulin in Non-Toxic Goitre and Response to Therapy. U. Feldt-Rasmussen, L. Hegedüs, H. Perrild, J. M. Hansen, M. Blichert-Toft, J. Date	235
Serum Thyroglobulin (hTg) for Follow-Up of Thyroxine Therapy in Endemic Goitre. CHR. REINERS, W. BÖRNER	245
F. lodine Prophylaxis	
Results of Iodine Prophylaxis. BA. LAMBERG	251
Pitfalls in Iodine Prophylaxis. G. Galvan	. 261
G. Surgical Treatment	
Surgical Treatment of Euthyroid Goitre. HD. ROEHER, P. GORETZKI	267
Postoperative Treatment of Endemic and Sporadic Goitre. E. GEMSENJÄGER	273
Thyroid Volume After Thyroidectomy for Non-Toxic Goitre – The Significance of Prophylactic Thyroxine Treatment. H. PERRILD, L. HEGEDÜS, S. KARSTRUP, D. VEIERGANG, J. M. HANSEN	285

$\mathbf{X} = Contents$

H. Radioiodine Treatment

Radioiodine Treatment of Non-Toxic Goitre. H. G. HEINZE	289
Results of Radioiodine Treatment in Cases of Non-Toxic Goitre. S. F. GREBE, H. MÜLLER, J. HORNIVIUS	301
Concluding Remarks. P. Scriba	305

Concluding Remarks

P. C. SCRIBA

The title of this symposium "Endemic and Sporadic Goitre" suggests, that both entities may be easily discerned. In fact, this conference has shown the contrary. There exists a continous spectrum ranging from countries with severe iodine deficiency, endemic goitre and sometimes even cretinism to countries with very mild endemia, some of them realized only recently, there is still existing some iodine deficiency within their borders as Belgium and Denmark. In Europe, only the Scandinavian countries are obviously free from any iodine deficiency.

Both entities, endemic and sporadic goitre, are heterogeneous both in pathogenesis and in appearence as discussed with a long list of mechanisms effective in both conditions by G. HENNEMANN: cigarette smoking drew attention to its role as a rediscovered goitrogen and the role of immunomechanisms leading to non-toxic goitre (thyroid growth stimulating immunoglobulins) was amply discussed. TGI's possible contribution to sporadic goitre prolongs the list of goitrogens.

A plea for a better epidemiology leading to new data on the incidence of goitre and on the urinary iodine excretion was put forward. An improved iodine prophylaxis performed with more consequence would hopefully result in the final disappearence of any endemic goitre leaving us with the truely sporadic goitre. The future incidence of the latter disease and its heterogeneity will have to be defined.

The diagnosis of non-toxic goitre in the individual patient is usually achieved by excluding all other possible thyroid diseases. This problem was only briefly touched. However, it has become very clear, that the diagnostic definition of the non-toxic goitre subgroups needs improvement, when therapeutic studies are being planed. Some of the therapeutic reports clearly lacked a definition of the degree of iodine deficiency and statements about "goitre age". consistence, volume, patient age groups and criteria for monitoring of side effects, therapeutic success and follow-up. In this sense, therapeutic studies are obviously difficult to perform.

During this conference, volumetry by means of ultrasonography was well accepted as a technique, which improves the control of therapeutic studies. It may be noteworthy, that one has to go as far as Stockholm in order to observe normal thyroid volumes both in school children and in adults!

Thyroid hormones, thyroxine, triiodthyronine and the combination of both, were discussed as medications for non-toxic goitre; in addition and perhaps as a surprise to some of us, there may be something like a renaissance of iodide for this treatment. However, it is probably fair to state, that some of the studies reported are still in the experimental phase. The regimen providing the maximum of an antigoitrogenic effect and the minimum of thyrotoxic side effects is still debated. In addition, follow-up studies will have to show the most effective means in order to prevent the occurence of goitre after medical treatment.

The results discussed apply largely to iodine deficiency goitre; the treatment of this disease is still necessary but it is hoped, that iodine prophylaxis will make it as superfluous as in Finland (A. LAMBERG). – There is a severe lack of information about the treatment of the subgroups of sporadic goitre in the presence of sufficient iodine intake, however.

Obviously, there remains a lot of important work for all of us to do.

Finally, it is my privilege and also my pleasure to thank the scientific organizers of this conference, Drs. REINWEIN and BEYSEL, and their helpers. Contributors and participants in this conference have made it a lively and interesting event. The most generous sponsor has made this conference in the beautiful city of Budapest a very pleasant experience which will last in our memory. Thank you all.