##  Table 1. TRAb concentrations in 245 patients with chronic thyroiditis and hypothyroidism.

|  |  |  |
| --- | --- | --- |
| **TRAb levels** (IU/L) | **N° of Patients (%)** | **Median TSH mIU/L (range)** |
| **<2.5**  | 213/245 (87) | 17.1 (7.0-434)**a** |
| >**2.5**  |  32/245 (13.1) | 51.3 (7.0-300) |
|  >**2.5-7.5**  |  14/245 (5.71) | 26.8 (7.0-128) |
|  **>7.5**  |  18/245 (7.36) |  86.8 (7.8-300)**b** |

aTSH levels were significantly increased in the patients with TRAb >2.5 IU/L compared to patients with TRAb <2.5 IU/L (p <0.01 ; Mann-Whitney test).bTSH levels were significantly increased in the patients with TRAb >7.5 U/L compared to patients with TRAb >2.5-7.5 IU/L (p= 0.025; Mann-Whitney test).

##  Table 2. Prevalence and concentration of TRAb in patients with different serum TSH levels.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Group** | **TSH (mIU/L)** | **Patients with** **TRAb ≥2.5 U/L**  | **TRAb levels** **Median (range)** | **Median age in years (range)** |
| **A** | 7-19 | 8/124 (7.3%) | 7.0 (2.5-40 IU/L) | 39 (12-81) |
| **B** |  >19 |  24/121 (19.8%)**a** |  9.0 (2.8-231 IU/L) | 44 (15-89) |

aThe prevalence of TRAb was significantly higher (p= 0.0022; Fischer’s exact test) in the

group B compared to group A.

**Table 3.** Prevalence and concentration of TRAb in females and males with chronic thyroiditis and hypothyroidism.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Gender** |  **Patients with****TRAb** >**2.5 U/L** | **TRAb levels** **Median (range)**  | **Median age in years (range)**  | **TSH mIU/L** **Median (range)** |
| **Females** | 22/193 (11.4%)  | 8.0 (2.9-231 IU/L) | 40 (12-89) |  18.0 (7.0-434) |
| **Males** |  10/52 (19.2%)**a** |  9.0 (2.5-88 IU/L) | 44 (12-85) |  23.6 (7.0-300) |

**a**The prevalence of TRAb was significantly higher in males (p=0.034; Chi-squared test) than

in females.

## Table 4. Prevalence of TRAb in females and males in different age groups

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Gender** | **Age**  | **Patients with****TRAb >2.5 IU/L** | **Age in years****Median (range)**  | **TSH (mIU/L) levels** **Median (range)** |
| **Females** | **16-45** | 16/106 (15%)**a** | 32 (16-45) |  17 (7-434)**b** |
| **>45** | 6/77 (7.8%) | 56 (46-89)  | 20 (7-316) |
| **Males** | **16-45** |  6/27 (22.2%)**c** | 35 (16-45) | 18 (7-300)**c**  |
| **>45** |  4/25 (16%) | 60 (47-85)  |  52 (7-185) |

**a**The prevalence of TRAb in females 16-45 years old was significantly higher than in the females >45 years old (p <0.05, Chi-squared test). **b**There was no significant differences in the concentration of TSH between age groups in females (P >0.05 Mann Whitney test).

**c**No significant differences were found between the prevalence or concentration of TRAb (p >0.05, Chi-squared test) or of TSH between the different age groups in males (P>0.05, Mann Whitney test).

**Table 5**. TRAb in 45 patients who had thyroid assessed by antero-posterior

 diameter in ultrasound examination.

|  |  |  |
| --- | --- | --- |
| **Thyroid****dimensions** | **Patients with****TRAb ≥2.5 IU/L N° (%)** | **TRAb levels****Median (range)** |
| **Reduced**  | 10/15 (67)**a** |  3.30 (1.0-231) |
| **Normal/Increased** |  9/30 (30) |  1.25 (1.17-2.05) |

 **a**The prevalence of TRAb was significantly higher (p <0.05; Kruskal-Wallis test)

 in patients with reduced compared to normal/increased thyroid dimensions.

**Table 6.** Analysis of TBAb and TSAb in 12 TRAb-positive patients using CHO transfected with wild TSH-R and mutated TSH-R255D.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  | **WILD TYPE TSH-R** | **MUTATED TSH-R-R255D** |
| **Patient****N°** | **Age (Sex)** | **TSH****(mIU/L)** | **TRAb levels** >**2.5 IU/L** | **TBAb %a** | **TSAb %b** | **TBAb %a** | **TSAb %b** |
| **1** | 43 (F) |  7.8 | 14.5 | **31** | **1128** | **36** | 128 |
| **2** | 71 (F) | 16.8 | 22.1 | **32** | **1867** | **39** | **276** |
| **3** | 63 (F) | 61.0 |  120.0 | **59** | **435** | **94** | 124 |
| **4** | 34 (F) | 68.1 | 34.5 | 14 | **200** | **77** | 139 |
| **5** | 38 (F) | 71.4 |  3.7 | **81** | 81 | **99** | 76 |
| **6** | 38 (M) | 89.7 |  3.3 | 18 | **152** | **34** | 107 |
| **7** | 85 (M) | 95.6 |  78.0 | **40** | **605** | **92** | 117 |
| **8** | 53 (M) | 98.0 | 9.6 | **32** | **1576** | **62** | **406** |
| **9c** | 51 (M) |  100.0 |  17.8 | 0 | **3230** | **46** |  **1401** |
| **10** | 31 (F) |  128.0 | 4.6 | **39** | 107 | **54** | 97 |
| **11** | 42 (M) |  152.0 |  88.0 | **79** | **235** | **95** | **171** |
| **12** | 27 (F) |  278.0 |  231.0 | **44** | **1342** | **97** | 130 |
|  **Positive** **Patients**  |  |  |  **12/12(100%)** | **9/12(75%)** |  **10/12(83%)** | **12/12(100%)** | **4/12(33%)** |

**a**In the blocking assay, samples that showed ≥30% inhibition of stimulating activity of TSH were considered positive for TBAb (shown in bold). **b**Samples that caused increase of cyclic AMP concentrations ≥150% relative to the healthy blood donor pool were considered positive for TSAb activity (shown in bold). **c**Patient with ohthalmopathy.

**Table 7.** Thyroid parameters in the 3 patients with CT and fluctuating thyroid function. The Patient number refers to those in Table 6 (bold for positive values of TRAb, TBAb and TSAb).

|  |  |  |
| --- | --- | --- |
|  | **WILD TYPE TSHR**  | **R255D TSHR** |
| **Patient (Gender, Age)** | **Disease phases****and duration** | **Therapy** | **TSH****(mUI/L)** | **TRAb levels (IU/L)a** | **TBAb** **(%)b** |  **TSAb****(%)c** | **TBAb****(%)b** | **TSAb** **(%)c** |
| **1** (F, 43) | Hypothyroidism | Started L-thyroxine andcontinued for 2 years. | **7.8** | **14.5** | **31**  | **1128** | **36**  | 128 |
|  | Euthyroidism | Stopped L-thyroxinefor 2 years | **2.15** | **11.6** | **34**  | **731** | **34** | 137 |
| **8** (M, 53) | Hypothyroidism | Started L-thyroxine andcontinued for 1 year. | **98** | **9.6** | **32**  | **1576** | **62** | **406** |
|  | Subclinical hyperthyroidism  | Stopped L-thyroxine | **0.01** | **29.4** | 0  | **2492** | **74** | **524** |
|  | Euthyroidism | No treatment for the subsequent 2 years | **3.8** | **9.8** | 0  | **1957** | **49** | **469** |
| **11** (M, 42) | Hypothyroidism | Started L-thyroxine and continued for 2 years | **152** | **88** | **79**  | **235** |  **95** | **171**  |
|  | Euthyroidism | Stopped L-thyroxinefor 1 year | **0.99** | **183** | **55**  | **627** | **89** | **327**  |
|  | Hyperthyroidism | Started methimazole | **0.01** | **30** | 12  | **1188** |  **78**  | **546**  |
|  |  Hyperthyroidism | Continued with methimazole for the subsequent 5 years | **1-3** | **28.6** | **36** | **629** | **81** | **195** |

**a**TRAb concentration positive ≥2.5UI/L (shown in bold). **b**In the blocking assay, samples that showed ≥30% inhibition of stimulating activity of TSH were considered positive for TBAb (shown in bold). **c**Samples that caused increase of cyclic AMP concentrations ≥150% relative to the healthy blood donor pool were considered positive for TSAb activity (shown in bold)