Supplementary Table I. Odds ratios and 95% confidence intervals of demographic data

Parameter	OR1 (95% CI)	OR2 (95% CI)	OR3 (95% CI)	OR4 (95% CI)
Age [years]	1.00 (0.98–1.02)	1.04 (1.01–1.07)*	0.99 (0.97–1.01)	0.96 (0.94–0.99)*
Women (%)	0.54 (0.33–0.88)*	0.65 (0.39–1.07)	0.24 (30.09–0.60)*	0.36 (0.14–0.91)*
Smoker (%)	1.45 (0.79–2.66)	1.73 (0.93–3.21)	0.66 (0.23–1.89)	2.64 (0.97–7.14)
FH of thyroid disease (%)	10.06 (3.53–28.65)*	11.9 (4.15–34.31)*	5.08(1.41–18.25)*	2.35 (0.98–5.65)
Body mass index	0.90 (0.84–0.96)*	0.89 (0.83–0.95)*	0.91 (0.82–1.01)	0.963 (0.89–1.05)

*GD – Graves' disease, HT – Hashimoto's thyroiditis, AITD – autoimmune thyroid disease (GD+ HT), control – control group. OR1 – odds ratio 1, AITD vs. control, OR2 – odds ratio 2, GD vs. control, OR3 – odds ratio 3, HT vs. control, OR4 – odds ratio 4, GD vs. HT, CI – confidence interval. *P < 0.05.*

Supplementary Table II. Comparison of serum free thyroxine (FT4), thyroid-stimulating hormone receptor antibody (TSHRAb), interferon-β (IFN-β), B-cell activating factor (BAFF) levels among different groups

Parameter	Control (*n* = 119)	AITD (*n* = 207)	GD (*n* = 160)	HT (*n* = 47)
FT4 [ng/dl]	–	1.52 ±1.39	1.64 ±1.53[d]	1.07 ±0.56[c]
log(TSH) [μU/ml]	0.22 ±0.25[c]	–0.46 ±1.13	–0.71 ±1.13[a,d]	0.35 ±0.66[c]
TSHRAb (%)	–	–	39.9 ±23.1	–
log(IFN-β) [pg/ml]	0.71 ±0.27[d]	0.66 ±0.25	0.67 ±0.25	0.61 ±0.25[a]
BAFF [pg/ml]	243.3 ±92.7[b,c,d]	416.8 ±142.8[a]	411.7 ±145.5[a]	433.8 ±133.3[a]

[a]P < 0.05 vs. control group, [b]p < 0.05 vs. AITD, [c]p < 0.05 vs. GD, [d]p < 0.05 vs. HT.

Supplementary Table III. Comparison of interferon-b (IFN-β), thyroid-stimulating hormone receptor antibody (TSHRAb) and anti-thyroid peroxidase (anti-TPO) levels between women and men in different groups

Parameter	Women	Men	*P*-value
Normal subjects			
log(IFN-β)	0.71 ±0.27	0.73 ±0.28	0.614
Autoimmune thyroid disease			
log(IFN-β)	0.65 ±0.24	0.69 ±0.29	0.315
High anti-TPO (%)	55.6	66.7	0.308
Graves' disease			
log(IFN-β)	0.66 ±0.23	0.71 ±0.30	0.246
TSHRAb (%)	38.8 ±22.7	42.7 ±24.2	0.488
High anti-TPO (%)	59.8	68.8	0.373
Hashimoto's thyroiditis			
log(IFN-β)	0.62 ±0.26	0.54 ±0.09	0.468
High anti-TPO (%)	73.7	100	1.000

Data are expressed as mean ± standard deviation. High anti-TPO group – anti-TPO titer ≥ 1 : 6400, low anti-TPO group – anti-TPO titer < 1 : 6400

Supplementary Table IV. Comparison of serum interferon-β (IFN-β) level in Graves' disease and Hashimoto's thyroiditis among different groups in both sexes

Graves' disease	Acute GD *n* = 56	Chronic GD *n* = 80	Remission GD *n* = 24
log(IFN-β) [pg/ml]	0.68 ±0.24	0.67 ±0.27	0.67 ±0.22
Hashimoto's thyroiditis	LT4 (–) group	LT4 (+) group	
	***n* = 9**	***n* = 38**	
log(IFN-β) [pg/ml]	0.72 ±0.34	0.59 ±0.23	

Data are presented as mean ± standard deviation. Acute GD – GD patients with new onset or recurrence prior to medication or those receiving anti-thyroid drug (ATD) within 3 months after disease onset, chronic GD – GD patients receiving ATD more than 3 months and remission GD (GD patients discontinued ATD and were in remission status according to the status in which we collected the blood samples). LT4(–) – drug naive, LT4 (+) – under levothyroxine sodium replacement group.

Supplementary Table V. Correlations of interferon-β (IFN-β) levels and smoking with thyroid-stimulating hormone receptor antibody (TSHRAb) and B-cell activating factor (BAFF) in Graves' disease

Parameter	Women				Men			
	TSHRAb		BAFF		TSHRAb		BAFF	
	r-value	*P*-value	*r*-value	*P*-value	*r*-value	*P*-value	*r*-value	*P*-value
IFN-β	–0.061	0.635	–0.152	0.108	–0.433	0.044	–0.316	0.032
Smoking	0.016	0.899	0.132	0.164	0.042	0.849	–0.077	0.612

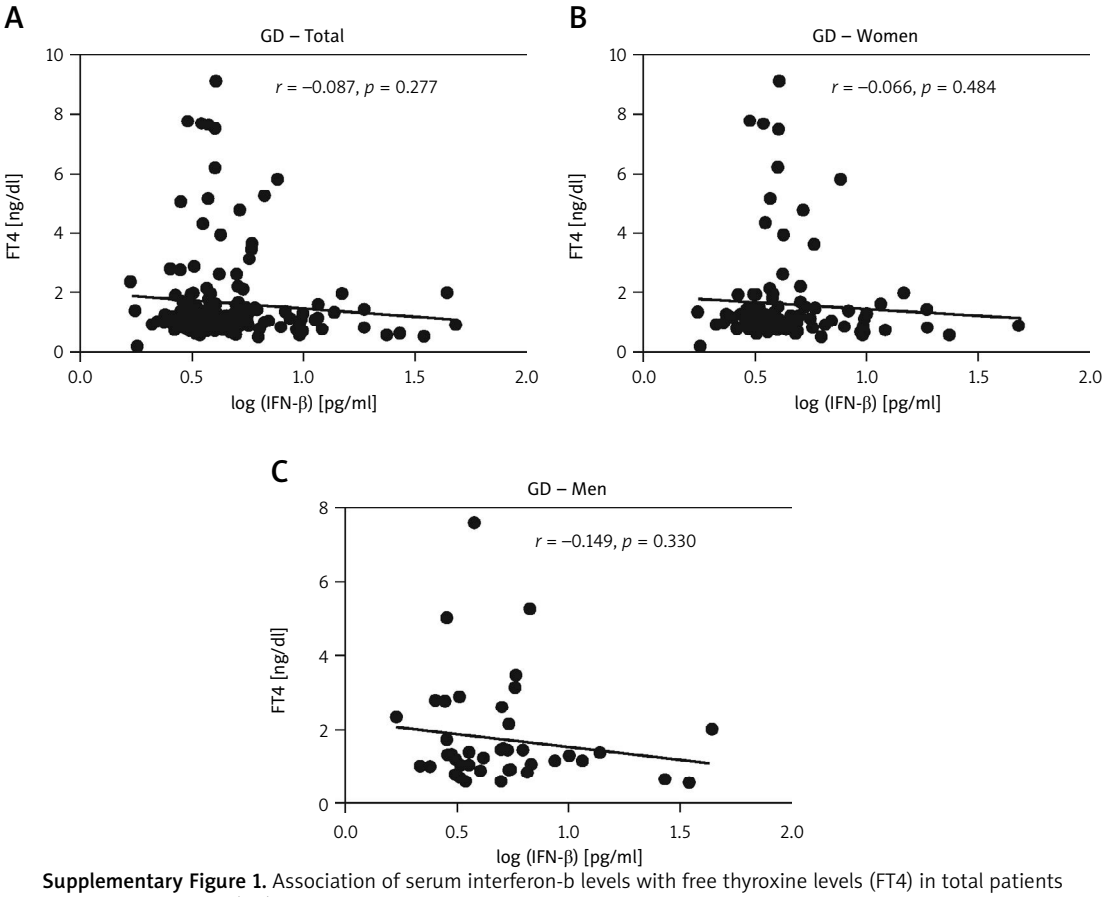
P < 0.05 indicates statistically significant.

Supplementary Table VI. Correlations of interferon-β level (IFN-β) with thyroid-stimulating hormone receptor antibody (TSHRAb) and B-cell activating factor (BAFF) in smoker and non-smoker groups in Graves' disease

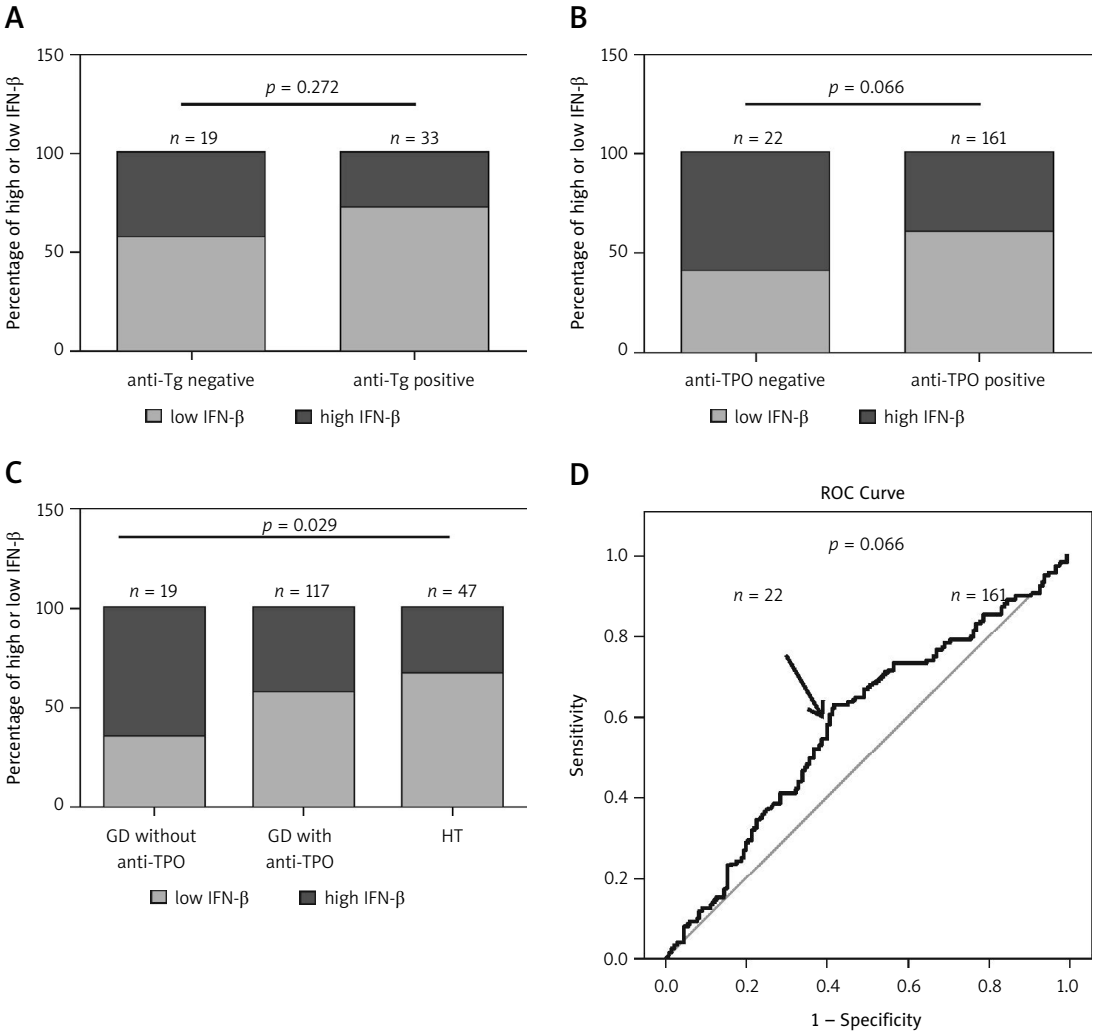
	Total			
	TSHRAb		BAFF	
	r-value	*P*-value	*r*-value	*P*-value
Non-smoker				
IFN-β	–0.008	0.951	–0.135	0.139
Smoker				
IFN-β	–0.600	0.005	–0.478	0.003

	Women				Men			
	TSHRAb		BAFF		TSHRAb		BAFF	
	r-value	*P*-value	*r*-value	*P*-value	*r*-value	*P*-value	*r*-value	*P*-value
Non-smoker								
IFN-β	–0.006	0.966	–0.157	0.109	–0.123	0.793	–0.028	0.917
Smoker								
IFN-β	0.595	0.290	0.563	0.146	–0.788	< 0.001	–0.562	0.002

P < 0.05 indicates statistically significant.



Supplementary Figure 1. Association of serum interferon-b levels with free thyroxine levels (FT4) in total patients with Graves' disease (GD), women with GD and men with GD. $P < 0.05$ indicates statistically significant



Supplementary Figure 2. Associations of low or high interferon-b (IFN-β) levels with the presence of an anti-thyroid peroxidase antibody (anti-TPO, panel A), the presence of an anti-thyroglobulin antibody (anti-Tg, panel B) in autoimmune thyroid disease (AITD), and the association of interferon-b levels with Graves' disease (GD) patients without anti-TPO, GD patients with anti-TPO, and patients with Hashimoto's thyroiditis (HT) (panel C) and the receiver operating characteristic (ROC) curve of IFN-β to predict AITD

The cutoff to determine high risk for predicting AITD is 4.328 pg/ml with a sensitivity of 60.5% and 59.4%, respectively, and we stratified AITD patients into low (< 4.328 pg/ml) and high IFN-β (≥ 4.328 pg/ml) groups based on the cutoff. $P < 0.05$ indicates statistical significance. Low IFN-β group is defined by IFN-β < 4.328 pg/ml while high IFN-β group is defined by IFN-β ≥ 4.328 pg.ml. $P < 0.05$ indicates statistically significant