Evaluation Of Autoimmune Thyroiditis Development On Onset And During Follow Up In Cases With Type 1 Diabetes Mellitus

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Introduction: Type 1 diabetes mellitus (T1DM) is the most common endocrine disease in children and adolescents. In this study, it was aimed to evaluate the frequency of autoimmune thyroiditis (AT) and the possible risk factors for AT at diagnosis and at follow up of T1DM patients.

Method: T1DM patients who were admitted to Trakya University Medical Faculty Pediatric Department, Pediatric Endocrinology Outpatient Clinic between January 2006 and September 2013 were evaluated.

Results: The mean age of 134 (63 M, 71 F) cases was 11,3±4,6 years, mean diagnosis age of diabetes was 8,1±3,9 years and mean diabetes duration was 3,1±2,4 years. AT was found in 19 (5 M, 14 F) out of 134 cases (%14,2). Clinical and laboratory findings of all cases are shown in Table 1. In AT (+) group the mean age was 13,9±3,6 years and diabetes duration was 4,2±2,9 years (Table 2). All cases were euthyroid at diagnosis but 6 of them then developed subclinical hypothyroidism (Figure 1). Sex, age, puberty, anthropometric measures, clinical and laboratory findings at the time of diagnosis of T1DM were similar in AT (+) and (-) cases. The mean age was higher and number of pubertal cases was more in T1DM cases with AT (Table 2).

Table 1. Clinical and laboratory findings of cases

	All cases (n=134)
	mean±SDS
Mean age (yaer)	11,3±4,6
Mean diagnosis age of T1DM (year)	8,1±3,9
Mean T1DM duration (year)	3,1±2,4
	n (%)
Gender	
male	63(47)
female	71(53)
Diagnosis season	
spring	39(29,1)
summer	21(15,7)
autumn	36(26,9)
winter	38(28,4)
Clinical type at administration	
diabetic ketoacidosis	68(52,7)
diabetic ketosis	49(38)
hyperglysemia	12(9,3)
	mean±SDS
Mean diagnosis HbA1c (%)	12,3±2,7
Mean diagnosis C-peptide (ng/ml)	0,43±0,39
	n (%)
Diabetes autoantibodies (positive)	
anti-GAD	55(47,4)
AIA	2(1,7)
ICA	1(0,9)
AT positive	19(14,2)

Table 2. Clinical and laboratory findings of cases with thyroiditis

	AT (+) cases (n=19)	AT (-) Cases (n=115)	p
	mean±SDS		
Mean age (yaer)	13,9±3,6	10,9±4,6	**0,005**
Mean T1DM duration (year)	4,2±2,9	2,9±2,3	0,139
Mean diagnosis age of T1DM (year)	9,8±4	7,9±4	0,077
Height (SDS)	0,46±1,2	0,22±1,1	0,742
BMI (SDS)	-0,49±1,2	-0,59±1,3	0,838
	n (%)		
Gender (F/M)	14/5	57/58	0,051
Diagnosis age of AT (year)			
0-4,9	0(0)		
5-9,9	5(26,3)		
10-14,9	13(68,4)		
≥15	1(5,3)		
Pubertal cases	15(78,9)	38(33)	**0,037**
Thyroid autoantibodies (positive)			
Anti-Tg	4(21,1)		
Anti-TPO	6(31,5)		
Anti-Tg and Anti-TPO	9(47,6)		
	mean±SDS		
Thyroid function tests			
sT4 (ng/dl)	1,01±0,2		
TSH (mIU/ml)	2,9±1,6		

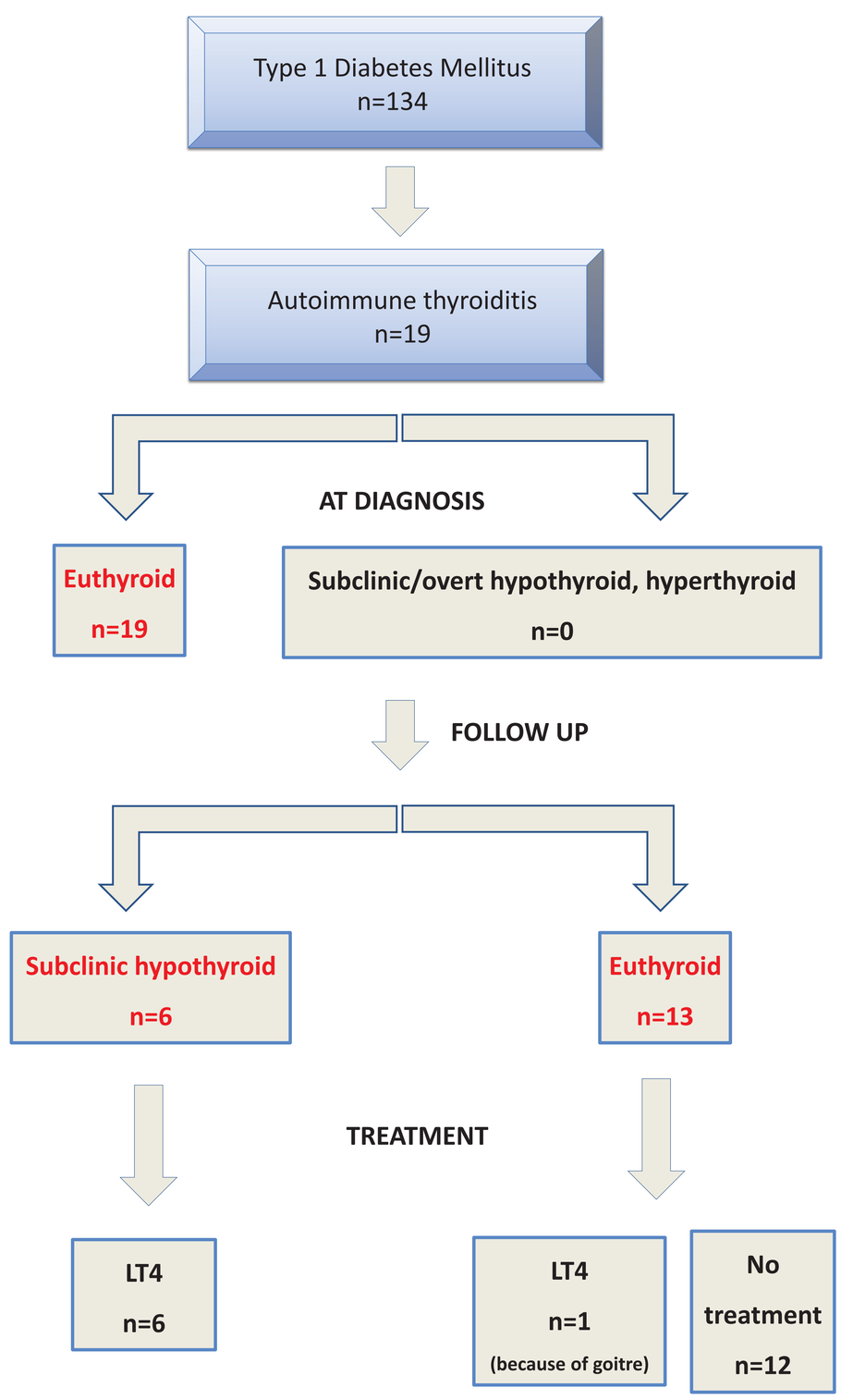

Figure 1. Follow up of AT (+) cases

Conclusion: In conclusion, AT incidence is high in T1DM cases, especially in pubertal cases. At the time of diagnosis, cases with AT are mostly euthyroid but because thyroid dysfunction may be seen in the future, close follow up is crucial. Therefore, T1DM cases should be assessed for thyroid autoantibodies and thyroid hormones annually.

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