

Treatment of dyslipidemia in children and adolescents with diabetes mellitus type 1

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Introduction and objectives

Cardiovascular disease (CVD) is the major cause of mortality in diabetes mellitus type 1 (T1DM). Dyslipidemia will increase this risk. Several guidelines have been published how to treat dyslipidemia in T1DM¹, yet some studies have shown that the number of patients who are treated according to these guidelines is low². To investigate the frequency of dyslipidemia in children and adolescents with T1DM, whether they are treated according to recent guidelines and if not, to identify the reason to deviate from the guidelines.

Methods

All children and adolescents with T1DM from the pediatric and transition diabetes outpatient clinic of the University Medical Center Groningen were retrospectively investigated. 210 Persons with T1DM (112 male and 98 female), 3-24 years old were included. Data of lipid profiles, HbA1c, smoking, BMI and in patients with dyslipidemia (LDL-c \geq 2,6 mmol/l), tracking of LDL-c (defined as \geq 75% of the LDL-c results \geq 2,6 mmol/l), blood pressure, family history for dyslipidemia and CVD were collected. We investigated whether patients were treated according to guidelines and asked the treating physician for possible reasons to deviate from them.

Topic: Diabetes Mellitus, dyslipidemia

Highlights

- Dyslipidemia is frequently seen in children and adolescents with diabetes mellitus type 1.
- Treatment percentage of dyslipidemia in this population is low.
- Awareness of early intervention is important.

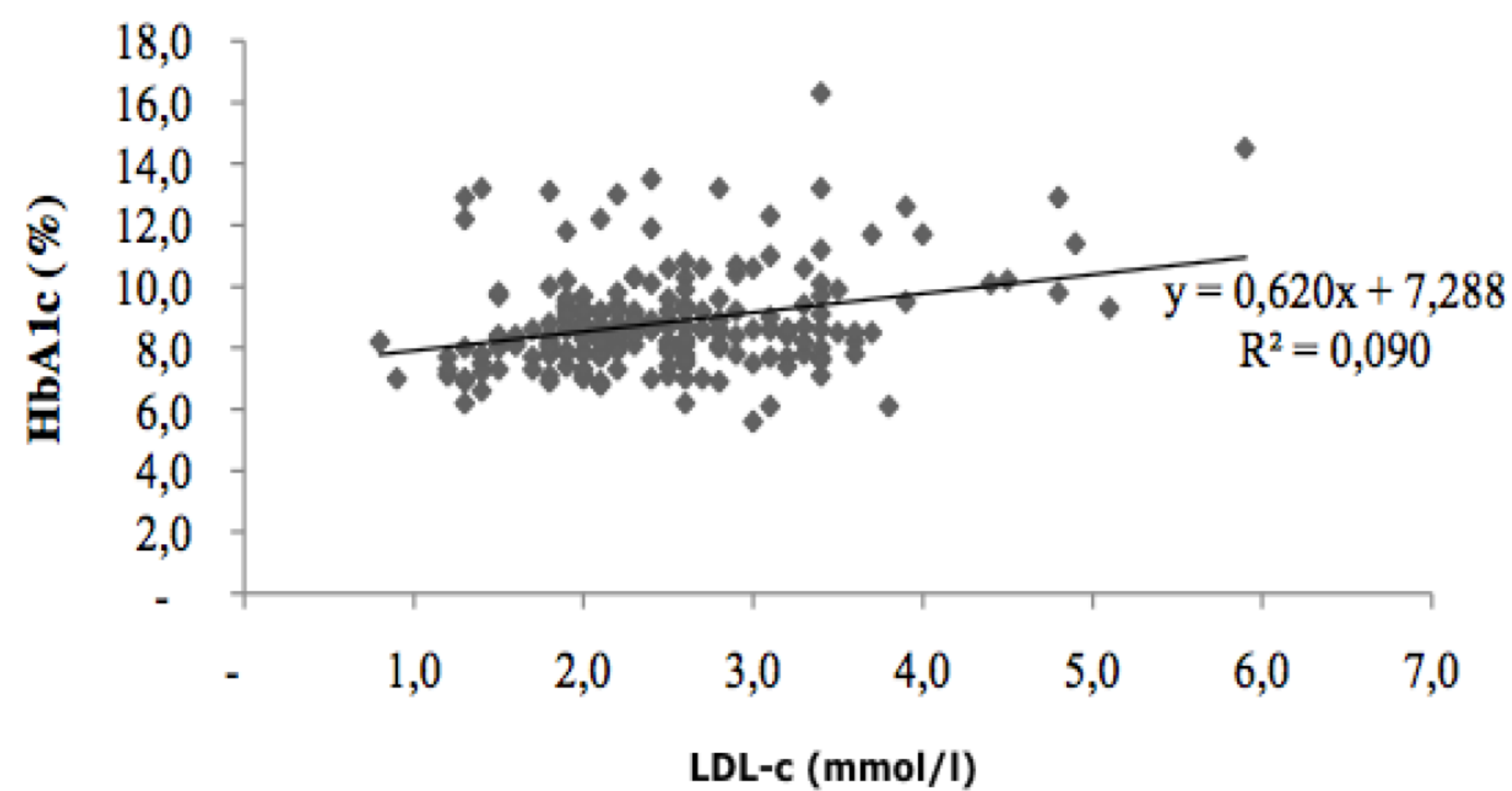
Results

41,9% (n=88) of the patients had dyslipidemia. Dyslipidemia was significantly associated with age, female sex, HbA1c and BMI.

In patients with dyslipidemia 65,6% showed tracking of LDL cholesterol, 42,5% had a positive family history for CVD and 28,8% for dyslipidemia.

11,4% of the patients with dyslipidemia were treated with a diet and 5,7% with statins. The most important reasons for not treating dyslipidemia were mild increase of LDL cholesterol (46,6%) and bad compliance with high HbA1c (28,4%).

Scatterplot LDL-c - HbA1c



Demographic, metabolic and clinical features of the population with diabetes mellitus type 1

Variable	Dyslipidemia (LDL \geq 2,6)	Without dyslipidemia	p-value*
N	88	122	
Age	16,5 (4,7)	15,2 (4,8)	0,05
Gender (%men)	44,3	59,8	0,03
Duration DM1 (ages)	9,4 (5,5)	8,2 (5,0)	0,09
HbA1c (mmol/mol)	75,1 (20,1)	70,0 (15,3)	0,05
HbA1c (%)	9,0 (1,8)	8,6 (1,4)	0,05
BMI (SD)	1,0 (1,0)	0,38 (1,1)	<0,001
Overweight (%BMI $>$ +1,1SD)	36,1	28,0	0,003
Smoking (%smokers)	5,3	7,3	0,62
Insulin regime (%pump)	67,0	67,8	0,88

References:

- ¹Donaghue K, et al. Ped Diab 2014;15:257-69
²Schwab K, et al. Diab Care 2006;29:218-25

Conclusion

Dyslipidemia is frequently seen in children and adolescents with T1DM, yet treatment percentage is low. Awareness for early intervention is important and research to investigate the benefit of treatment is needed.

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