

ABSTRACT

There has been a considerable increase in the use of continuous subcutaneous insulin infusion (CSII) in the Russian Federation in recent 10 years with substantial benefits for glycemic control. However, despite the advantages and effectiveness, some patients discontinue insulin pump. Objectives of the study were to estimate CSII discontinuation rate and associated reasons.

METHODS

We survived 395 type 1 diabetes mellitus (T1DM) patients aged 2-25 years with duration of CSII for >6 months to investigate reasons and CSII discontinuation rate. Data were collected through CSII register of "Endocrinology Research Center" and cross-sectional analysis (telephone call). Data presented as Mean (SD) or %. Predictors of CSII discontinuation were assessed using logistic regression model.

RESULTS

At the time of the study mean duration of CSII was 2,6(1,8) years. Forty seven (11,9%) patients refused CSII corresponded to 4,6 cases per 100 patient-years. The mean duration of CSII at the time of the discontinuation was 1,6(1,3) years, and HbA1c 9,1(1,7)%. The reasons for discontinuing CSII in 46,8% of cases was the inconvenience of use (hassle of constantly wearing an external device, inconvenience during the summer time or physical exercises etc.), in 23,4% - cost of supplies (no or lack of reimbursement for CSII), in 21,3% - frequent complications (occlusions, kinking, diabetic ketoacidosis, infusion site problems etc.), in 6,4% - lack of effect (no improvement or deterioration of HbA1c), in 4,3% - poor adherence to the treatment by child/adolescent. In 8,5% of cases there were other reasons (weight gain, absence of a CSII specialist at the place of residence or others reasons) (Figure 1). Predictors for CSII discontinuation were male gender (OR 0,46), shorter duration of CSII (OR 0,71), HbA1c above 7,5% at the time of discontinuation (OR 3,11) and no/lack of reimbursement for CSII (OR 0,38) (Table 1).

CONCLUSIONS

Many young patients refuse CSII. This highlights the need for efforts to increase efficiency and overcome barriers to using and wearing devices.

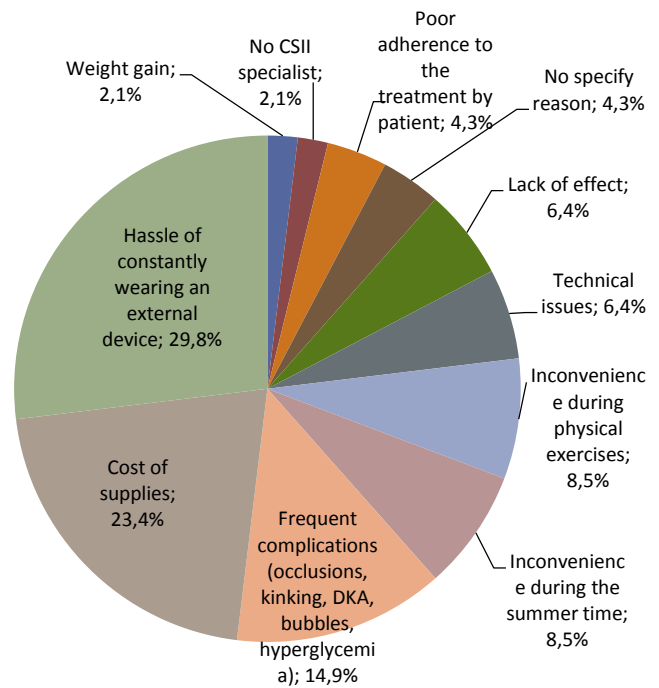


Figure 1: Reasons and frequency of CSII discontinuation

Table 1: Results of logistic regression

	OR	95% CI		P
	Logistic regression Model (Enter)			
Male gender	2,19	1,07	4,48	0,032
Age	0,91	0,82	1,01	0,065
DD	1,08	0,95	1,22	0,241
CSII duration	0,71	0,54	0,93	0,012
HbA1c≥7,5% pre-CSII	0,46	0,18	1,19	0,108
HbA1c≥7,5% post-CSII	3,11	1,13	8,52	0,028
DKA	0,31	0,09	1,11	0,071
SH	0,88	0,18	4,3	0,870
Reimbursement for CSII	0,38	0,18	0,8	0,011
SMBG	0,89	0,76	1,04	0,149
CGM usage	0,37	0,09	1,59	0,182
Rural area	0,7	0,24	2,02	0,508
Constant	1,76			0,625
	Logistic regression Model (Backward: Conditional [entry 0,05;removal 0,1])			
Male gender	2,16	1,08	4,35	0,031
CSII duration	0,71	0,56	0,9	0,005
HbA1c≥7,5% post-CSII	2,73	1,09	6,86	0,033
DKA	0,34	0,1	1,17	0,087
Reimbursement for CSII	0,41	0,2	0,84	0,015
Constant	0,29			0,021

Values are odds ratios (OR) and 95% confidence interval (CI). DD- diabetes duration, DKA – diabetic ketoacidosis, SH – severe hypoglycemia, SMBG – self monitoring of blood glucose; CGM – continuous glucose monitoring.