COMMON BARRIERS TO USING NEW SITES FOR INSULIN INJECTION/INFUSION IN ADULTS WITH TYPE 1 DIABETES (T1D)

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Background and aims

Proper site rotation is a crucial aspect of insulin administration and prevention of lipodystrophy among people with T1D. The aim of this study is to investigate perceived barriers to optimal rotation plan among people with T1D with a focus on different insulin regimen (MDI vs CSII).

Study population characteristics

- ✓ 108 participants with T1D,
- ✓ 77% female, 23 % men,
- ✓ mean age 32.6±11.4 years,
- ✓ 61% on MDI, 39 % on CSII.

Variable	MDI Mean ± SD	CSII Mean ± SD	p-value
Age (years)	34.2±11.9	30.1±10.2	.046
Female (%)	76	79	.67
T1D duration	12.8±10.9	14.9±8.9	.10
HbA1c (%)	7.47±0.21	7.11±0.21	.08

Methods

Recruiting: anonymous questionnaire in Google Forms spread by social media group Diabet Connect (4095 participants in vk.com & 4813 participants in Instagram).

Questionnaire: participants answered about

- ✓ their diabetes history,
- ✓ number and location of injection or infusion sites,
- ✓ current insulin rotation plan,
- ✓ common barriers to use multiple sites for insulin injection or insertion infusion sets.

Statistical analysis: Wilcoxon test and Exact Fisher's Test were applied to compare MDI- and CSII-groups; linear regression model was used to describe the observed correlations.

Results

There was negative correlation between the number of barriers to site rotation and number of sites reported for MDI group (p=0.0013). However, a positive correlation was found between the number of sites used by insulin pump users and time since diagnosis (p=0.0047). More people using CSII (88.1 %) than using MDI (60.6 %) reported believing that rotating sites would improve overall diabetes control (p=0.0042).

Perceived barriers to site rotation reported by the study participants on MDI vs CSII	MDI (%)	CSII (%)	p-value (χ^2-test)
I tried a new insulin site and it hurt more than those I usually use	20	23	1.00
I am comfortable with my current practice	**67**	**48**	**0.15**
New sites fill more awkward	51	29	0.09
I tried some new insulin sites and had problems	8	23	0.14
I tried a new insulin site and insulin worked worse	2	16	0.06
New sites feel more uncomfortable	29	6	0.03
I did not know insulin sites should be rotated	0	3	0.82
Did not know about other insulin sites	12	10	1.00
I choose insulin sites that are invisible for others	22	10	0.25
I am worried about aesthetic issues (e.g. scars, redness)	8	3	0.68
It is difficult for me to find the right clothes, so I inject where it is easy to reach	14	13	1.00

Conclusion

Patients continue to have many issues with insulin sites rotation plan. Periodic reassessment of injection technique, including sites rotation, is needed. Consideration of human factors associated with incorrect rotation plan and motivational interviewing may help to improve adherence to new sites.

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