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Introduction

Individuals in clinic report and data from clinical trials demonstrate improvements in quality of life diabetes distress and reduced burden of diabetes management following commencement of hybrid closed-loop therapy (HCL)^{1,2}. The NHS England pilot launched in 2021 and funded access to HCL for individuals using pump therapy, FreeStyle Libre 2 (intermittently scanned) and with a HbA1c ≥ 69 mmol/mol. We report diabetes distress and quality of life outcomes in the NHS England pilot at 12-months following commencement.

Methods

Diabetes distress scale scores (DDS) and Likert ratings (1=extremely negative, 7=extremely positive) for impact on quality of life at 12-months (9-18 months) follow-up are reported. Comparisons with baseline and 6-months were made using paired T-tests (for DDS) and Chi² for proportion of individuals with distress (mean DDS ≥ 3) before and after HCL. Likert ratings are reported with simple descriptive statistics.

Results

Data for 421 individuals were included, with mean \pm SD age 41.1 \pm 13.9 years, diabetes duration 23.3 \pm 11.5 years, baseline HbA1c 77.5 \pm 10.3 mmol/mol and weight 80.8 \pm 17.6 kg. In total, 69.6% were female and 91.3% were white. Mean \pm SD follow-up time was 12 \pm 2.4 months.

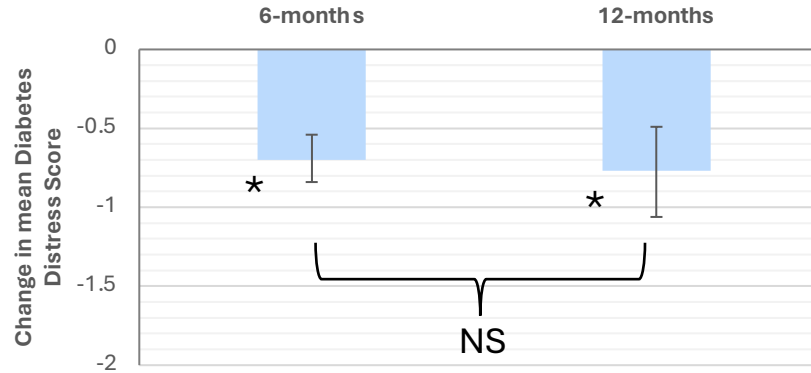


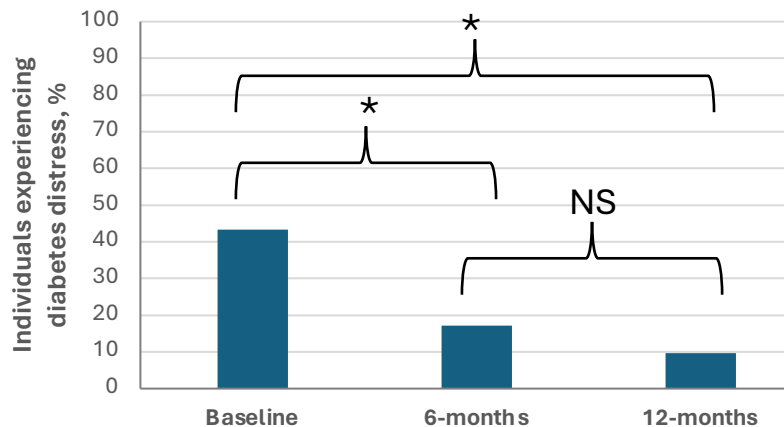
Figure 1. (above) Change in mean diabetes distress scores at 6- and 12-months from baseline, error bars representing 95% confidence intervals

Legend

=P<0.05; NS=Not significant

*

Figure 2. (below) Proportion of individuals with diabetes distress (DDS ≥ 3), percentage



Results (cont.)

Mean diabetes distress scores reduced by 0.7 from 2.7 to 2.0 (95% CI 0.6-0.9; P<0.001 at 6-months and persisted with no further statistically significant reductions at 12-months (mean DDS 1.8). The proportion of individuals experiencing diabetes distress reduced from 43.4% to 17.2% at 6-months and 9.7% at 12-months (P<0.01). The change in proportion of people with diabetes distress between 6- and 12-months was non-significant. In total, 95.5% (n=402) rated that HCL had a positive impact (Likert 5-7) on quality of life; only 11 (2.7%) rated HCL had a negative impact on quality of life (Likert 1-3). 96.9% (n=408) would recommend HCL therapy to other people with diabetes.

Discussion

HCL is associated with reductions in diabetes distress and positive impacts on quality of life. The majority would recommend HCL as an option to others living with diabetes. Further patient reported outcomes from the ProHCL qualitative study are awaited.

References

1. M Abraham et al., *JAMA Paediatr* 2021
2. R Adams et al., *DTT* 2018

Conflict of interests

TSJC has received personal fees from Insulet, Abbott Diabetes Care, Dexcom, Sanofi, Lilly, NovoNordisk. COI for other authors are recorded online.