

Effectiveness of premixed insulin to achieve glycaemic control in type 2 diabetes: a retrospective UK cohort study



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Introduction

Study design

Key results

Conclusion

Introduction

For people with T2D inadequately controlled with one or two OAD(s), UK NICE guidelines recommend the following:



HbA_{1c} ≥7.5 % (≥58 mmol/mol)

Switch to insulin-based treatment



HbA_{1c} ≥9 % (≥75 mmol/mol)

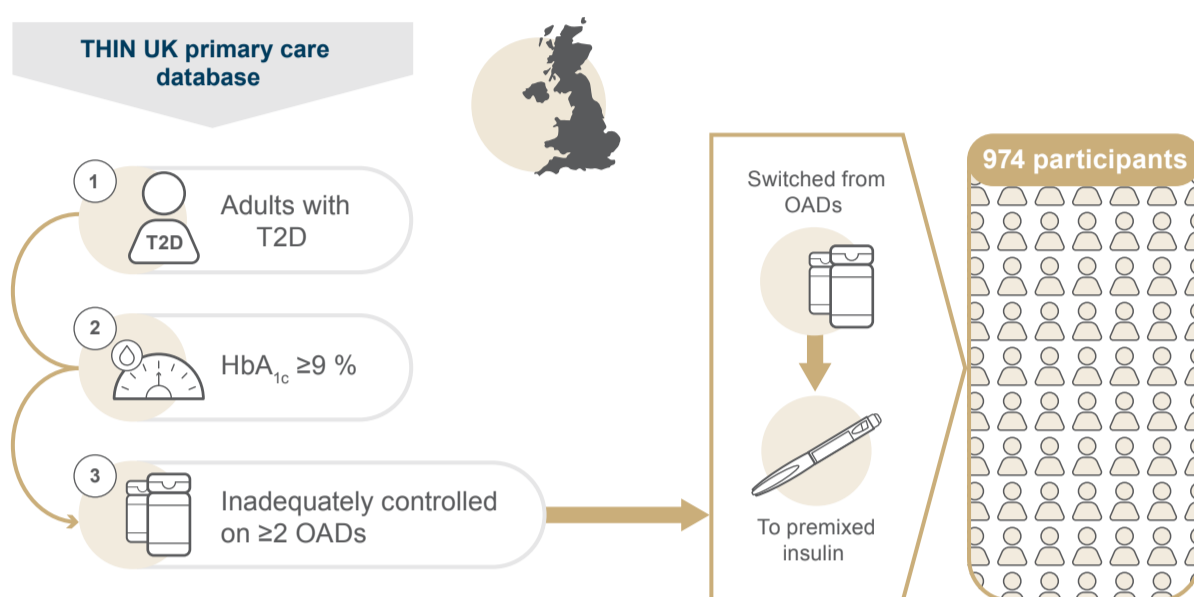
Premixed insulin is an option

Objective



To investigate the real-world effectiveness of premix regimens for achieving glycaemic control in routine clinical practice in the UK

Study design



Primary objective

The primary objective of the study was to investigate the real-world effectiveness of premixed insulin, assessed as the probability of reaching glycaemic control



HbA_{1c} <7.5 %
(<58.5 mmol/mol)

Sensitivity analysis

The incidence of reaching glycaemic control (HbA_{1c} <7.5 %), and the mean change in HbA_{1c}, all over 24 months post-premixed insulin initiation

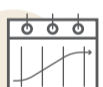
Key results

Glycaemic control

Probability of achieving glycaemic control (HbA_{1c} <7.5 %) following premix initiation:



Was low (<20%)

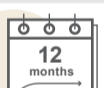


Was highest at 3–6 months (18.2%)



Plateaued after 15–24 months

Incidence of achieving (HbA_{1c} <7.5 %) or improving (≥1 % and ≥2 % HbA_{1c} decrease from baseline) glycaemic control following premix initiation



Plateaued after 12 months

Associations between baseline characteristics and incidence of glycaemic control achievement or improvement

	Achieving glycaemic control	
	Less likely	More likely
HbA_{1c} <7.5 %		
Baseline HbA _{1c} 9–10 % (ref >11 %)	○	●
≥1 % HbA_{1c} decrease from baseline		
Age 45–54 years (ref >75 years)	●	○
Baseline HbA _{1c} 9–10 % (ref >11 %)	●	○
Stroke during baseline period	○	●
≥2 % HbA_{1c} decrease from baseline		
BMI >40 kg/m ² (ref <25 kg/m ²)	●	○
Baseline HbA _{1c} 9–10 % (ref >11 %)	●	○
Baseline HbA _{1c} >10–11 % (ref >11 %)	●	○
Nephropathy during baseline period	○	●
Peripheral vascular disease during baseline period	●	○

Conclusion



The incidence of achieving glycaemic targets on premix was low at 6 months, with little additional benefit beyond 6 months, with little additional uncontrolled T2D (HbA_{1c} ≥9 %) who initiated premixed insulin as per NICE recommendations. This suggests a high unmet need for early, timely treatment changes with more effective, simpler therapies in these patients

Abbreviations

BMI, body mass index; HbA_{1c}, glycated haemoglobin; NICE, National Institute for Health Care and Excellence; OADs, oral antihyperglycaemic drugs; THIN, The Health Improvement Network; T2D, type 2 diabetes; UK, United Kingdom

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