

ABCD 2024 winning posters

Br J Diabetes 2024;24(2):183
<https://doi.org/10.15277/bjd.2024.468>

These posters were presented at the ABCD meeting in Bristol on the 4th-5th September 2024

How does ethnicity affect phenotype in early-onset type 2 diabetes?

S Jones, V Bansal, S Misra

Imperial College, London

Background: Early-onset type 2 diabetes (EO-T2D) disproportionately affects Asian and Black ethnicities in England, but the impact of ethnicity on EO-T2D phenotype has not been well studied. Correct classification of EO-T2D is challenging, with misclassification that may impact phenotypic descriptions from population-level data. We compared phenotype of EO-T2D in White-European, South-Asian and African-Caribbean ethnicities using a robust, biomarker-defined classification.

Methods: Individuals diagnosed with any type of diabetes before the age of 30 years were recruited. Clinical characteristics and biochemistry were collected. Ethnicity was defined using grandparental origin. Diabetes subclassification was assigned using pancreatic auto-antibodies, C-peptide and genetic analysis for MODY. T2DM cases were defined by absence of auto-antibodies, fasting C-peptide >200pmol/L or random C-peptide >600pmol/L, and absence of pathogenic mutations causing monogenic diabetes.

Results: 267 EO-T2D cases were identified from 1,785 individuals recruited. They comprised 47 (17.6%) White-European, 169 (63.3%) South-Asian and 51 (19.1%) African-Caribbean individuals. Compared to White-European participants, South-Asians were significantly more likely to have two parents affected by diabetes (47.9% SA vs 13.3% WE, $p<0.001$), a lower body mass index (BMI, 29.1 vs. 32.3 kg/m², $p=0.02$), and higher alanine aminotransferase (ALT, 26 vs 21 U/L, $p=0.027$). African-Caribbean participants had higher HbA_{1c} (79 vs 56 mmol/mol, $p=0.002$) and lower fasting C-peptide (480 vs 654 pmol/L, $p=0.01$) than White-Europeans. South-Asian participants had higher HOMA2-IR, HOMA2-B, fasting C-peptide, ALT and triglycerides, lower HbA_{1c} and higher levels of albuminuria than African-Caribbean participants (all $p<0.05$).

Conclusion: There is substantial phenotypic variation in EO-T2D by ethnicity. Understanding how this variation impacts clinical management is warranted to ensure a precision-based approach to treatment.

Assess and enhance insulin literacy among nursing staff: an inpatient pilot insulin safety project at a secondary care hospital

Ammara Naeem, Katherine Oleary, Caroline Memmi, Inga Campos,

Deepa Chandran

Whittington Health NHS Trust, London

Introduction: Insulin, used to treat both type 1 and type 2 diabetes mellitus (T1DM and T2DM), is a high-risk medication. Improper use can lead to hyperglycaemia or hypoglycaemia, causing avoidable patient harm. It is frequently implicated in adverse drug events and medication errors globally. Small-scale studies highlight low confidence and knowledge gaps among nurses regarding insulin use.

Aims and objectives: The aim was to assess the knowledge and confidence of our nursing staff in administering insulin and handling common scenarios of hypoglycaemia and hyperglycaemia, particularly in our diabetes, endocrine, general medical and acute medical wards, where they are often the first point of patient contact. This project was initiated by the unit's consultant, who observed gaps in insulin literacy during ward rounds. The project aimed to uncover any lack of confidence and knowledge in insulin administration among nurses, potentially highlighting a national concern. Our goal was to reinforce essential insulin concepts, improve the identification of hypo- and hyperglycaemia, and promote safe management practices.

Material and methods: The QIP was conducted at Whittington Health NHS Trust, a teaching hospital in North London, from March to August 2024, across two wards: the diabetes/endocrine/general medical and the acute medical wards. An electronic questionnaire was distributed to all nursing staff on these wards, followed by an assessment of the results. Educational sessions were then organised and delivered in collaboration with ward managers by the doctor leading the project. To evaluate the improvement in practice after the educational intervention, a follow-up questionnaire was administered.

Results: A pre-and post-education survey was circulated to 45 nurses across two wards, with 38 respondents. Nurses typically managed 6–10 diabetic patients daily, nearly 45% of whom were on insulin. Before the education session, 55% of nurses reported low confidence in managing patients on insulin; however, this improved to 90% post-session. Nurses demonstrated good knowledge of identifying long- and short-acting insulin, with 60% aware of the need to administer short-acting insulin 15–30 minutes before meals – an important point reinforced during the education session.

A significant knowledge gap was identified regarding the safe step-down of variable rate insulin, however, with 53% of nurses initially unaware of the recommendation. Post-education, the number unaware decreased to 26%. Initially, 80% of nurses showed good knowledge of managing hypoglycemia and hyperglycemia, which increased to 93% following the session. While 91% of nurses knew about the hypobox, only 82% were aware of its location; after the session, all nurses knew both its purpose and location, essential for effective hypoglycemia management. Following the education session, 99% of nurses felt more confident in managing hypoglycemia. Additionally, 97% of the participants acknowledged that the sessions positively impacted their practice in managing insulin-dependent patients.

Conclusion: This pilot audit identified areas where education could drive practice changes to enhance care quality for insulin-treated diabetes inpatients. Despite the small sample size, the findings underscore the need for improved education on essential insulin concepts among nursing staff across the Trust. This has highlighted the importance of extending the project to other critical areas, such as emergency medicine, where implementation is currently underway. Additionally, there are plans to introduce this training as a mandatory component of the inpatient nurse induction program.

Please visit www.bjd-abcd.com for all the abstracts presented