

Impact of COVID 19 National Lockdown on Glycaemic Control in Children and Adolescents With Type 1 Diabetes (T1DM): A Retrospective Review at a Large UK Teaching Hospital

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Introduction: The coronavirus disease global pandemic led to national lockdown in the United Kingdom on 23rd March 2020. We compared the glycaemic control of children and adolescents with Type 1 diabetes (T1DM) at Doncaster & Bassetlaw Teaching Hospitals in the 12 weeks prior to the lockdown, to the 12 weeks following lockdown.

Methods: HbA1c result 3 months following lockdown was compared to the last HbA1C prior to lockdown. Data from Continuous Glucose Monitors (CGMs), Flash Glucose Systems (FGS) and those performing Self-Monitoring of Blood Glucose (SMBG) were compared alongside changes to patient contact that occurred.

Results: In 264 patients under 20 years of age across both hospitals in the Trust, face-to-face consultations decreased (245 vs 151, 39%), and remote consultations increased (1751 vs 2269, 30%) (χ^2 $p < 0.001$). Excluding those within a year of diagnosis, 122 had paired HbA1c results, and 80 had more than 70% of glucose monitoring data available. HbA1c levels decreased (67.4 mmol/mol vs 61.3 mmol/mol, $p < 0.001$) and glucose monitoring data showed lower mean glucose after lockdown (9.7mmol/L vs 9.5mmol/L, $p = 0.034$) with lower standard deviation (4.4mmol/L vs 4.2mmol/L, $p < 0.001$). Proportion of time in range (3.9mmol/L to 10mmol/L) increased ($n = 47$, 55.2% vs 58.0%, $p = 0.017$), with no change to time below range (4.8% vs 5.0%, $p = 0.495$).

Conclusion: Glycaemic control improved in the 12 weeks following national lockdown. This demonstrates the difficulties faced by patients and carers managing T1DM around school pressures, meals away from home, social life and peer pressure. Increased remote contact with patients with T1DM has not been detrimental to glycaemic control.