**Glycation Gap: Size, Stability and Correlates in Adults with Type 1 Diabetes.**

**Aims:** HbA1c and Continuous Glucose Monitor (CGM) metrics have clinical and research targets. There may be discordance between measured HbA1c and CGM-based estimated HbA1c or Glucose Management Index (GMI). This Glycation Gap (GG) may impact clinical care and has multiple potential causes. We aimed to determine GG size, stability and correlates in adults with Type 1 diabetes (T1D).

 **Methods:** An ethics-approved audit of the institute’s medical records was conducted. The GG = HbA1c - GMI (calculated for the preceding 14, 28, 60 and 90 days). Data from adults with T1D were analysed using descriptive statistics, Spearman correlation coefficients and ANOVA with significance at p<0.05.

 **Results:** Cross-sectional analysis: n=137 adults, 54.7% male, median(IQR) age 50(32)yrs, median(IQR) HbA1c 7.4(1.5)%. GG at 14, 28, 60 and 90 days correlated, r=0.848 – 0.976, all p<0.0001. Median GG (90 days) was 0.1%; range -2.8 to +1.5%, 59.0% had GG>+0.3% or ≤-0.3% (Figure A).

Longitudinal analysis (≥2 GG readings):n=106/137 adults, 56.6% male, median(IQR) age 51.5(32.25)yrs, median(IQR) HbA1c 7.35(1.3)%. The GG at days 14, 28, 60 and 90 at each timepoint did not differ significantly (Figure B). Median(IQR) GG (90 days) at baseline, time-point one and two were 0(0.675)%, 0.1(0.7)% and 0.1(0.7)%, and did not differ significantly.
Using cross-sectional data, GG significantly correlated with age, r=-0.2470 – -0.2097, but not with sex or T1D duration.

**Conclusion:** In adults with T1D, GG has a wide range and is stable over time.

