ARE VARIATIONS OF GLYCATED HEMOGLOBIN GIVEN BY THE FREESTYLE DEVICE ACCURATE?

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BACKGROUND-AIM
Continuous glucose monitoring (CGM) by interstitial glucose fluid monitoring is a major recent improvement in the global care of diabetic patients. The FreeStyle Libre (FSL) allows CGM, but can also provide an estimated glycated hemoglobin (eA1C) based on serial interstitial glycaemia. Several studies showed a good correlation between eA1C and measured glycated hemoglobin (A1C) in cross-sectional designs.
In the current study, we studied the ability of the FSL to correctly estimate such variations of A1C.

METHODS
Patients from our University hospital with the following criteria were considered: type 1 diabetes with FSL and two values of A1C within an interval of 80 to 100 days, values obtained from FSL (Abbot Diabetes Care) on one part and the laboratory (HPLC, HA8180, Menarini) on the other part.
The values should be obtained within the same period (±8 days). According to biological variation of A1C measurement, a change in A1C concentration of minimum ±6% was considered as clinically significant. Accordingly, the patients were classified with the two techniques as stable, “improving” (value decreased) or “worsening” (value increased).

RESULTS

CONCLUSION
In this study, we showed that variations of A1C are correctly assessed by eA1C in two-third of the patients. In the remaining third, discrepancies are observed between stable and others, but “improving” patients are never classified as “worsening” (or the inverse).