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Assessment of Postprandial Glucose Excursions throughout the day in newly diagnosed Type 2 Diabetes

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Introduction [1]

● Evidence points towards that postprandial glucose should be added to HbA1c and fasting glucose measurements in type 2 patients.

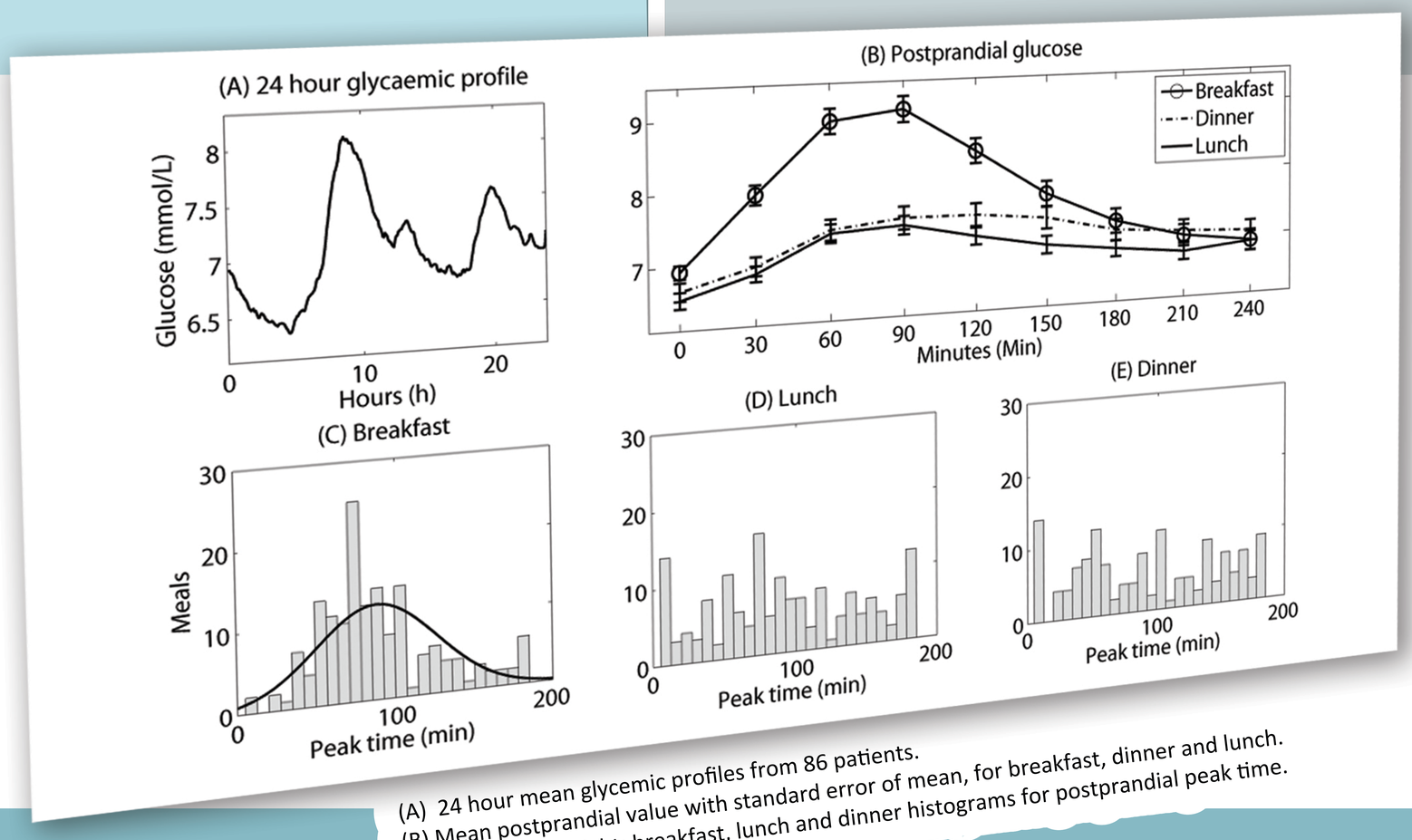
Aim: an on-going debate is questioning how to asses postprandial glucose. This observational study looks further into this question in newly diagnosed type 2 Diabetes patients

Conclusions

● Breakfast is associated with larger and more consistent postprandial glucose excursions than seen after lunch and dinner.

● Self-monitoring of postprandial blood glucose should be evaluated with care.

● Monitoring of postprandial glucose patterns should be obtained approximately 90 minutes following breakfast for reducing day to day variations.



(A) 24 hour mean glycemic profiles from 86 patients.
(B) Mean postprandial value with standard error of mean, for breakfast, dinner and lunch.
(C-E) form left to right: breakfast, lunch and dinner histograms for postprandial peak time.

Methods

● 3 days continuous glucose monitoring (CGM)
● 462 meals were analyzed
● Calculation of inter- and intra variability between breakfast, lunch and dinner.

Patients

● 86 non-insulin treated type 2 Diabetes patients
● 55 % females
● Age 61 (10)
● BMI 30 (4.5)
● BP 126 (12) / 79 (8)
● HR 66 (10)

Results:

● Peak time: median 90 min
● Peakglucose: breakfast 10.2 (2.5) mmol/l
lunch 8.4 (1.6) mmol/l
dinner 8.8 (2.1) mmol/l
(ANOVA, $p < 0.001$)

Results: Intraclass correlation

● Peak time: breakfast 0.60 ($p < 0.05$)
lunch (Not significant)
dinner (Not significant)
● Peakglucose: breakfast 0.86 ($p < 0.05$)
lunch 0.44 ($p < 0.05$)
dinner 0.74 ($p < 0.05$)

References

[1] Monnier et al. Integrating glycaemic variability in the glycaemic disorders of type 2 diabetes: a move towards a unified glucose tetrad concept. Diabetes/metabolism, 2009

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