Clinical Research– Senior Category
Best Oral Paper Presentation

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Maternal Circadian Feeding Time and Frequency are Associated with Blood Glucose Levels during Pregnancy

Loy See Ling1, Fabian Yap Kok Peng1, Mary Chong Foong-Fong2, Jerry Chan Kok Yen1, Marjorelee T Colega2, Cheung Yin Bun3, Wee Poh Hui1, Keith M Godfrey4, Lek Ngee1, Falk Müller-Riemenschneider5, Natarajan Padmapriya5, Peter D Gluckman2, Chong Yap Seng5, Kenneth Kwek Yung Chiang[1], Saw Seang Mei[5]

[1]KK Women's and Children's Hospital, [2]A*STAR, [3]Duke-NUS Medical School, [4]University of Southampton, United Kingdom, [5]National University of Singapore

Aims: Synchronising eating schedule with daily circadian rhythms may improve metabolic health, but its potential association with gestational glycaemia is unknown. This study examined the association of maternal night-fasting intervals and eating episodes with glycaemic levels during pregnancy.

Methodology: Cross-sectional study within a prospective cohort in Singapore. Maternal 24-hour dietary recalls, fasting glucose and 2-hour glucose concentrations were ascertained at 26–28 weeks' gestation for 1061 women. Night-fasting interval was based on the longest fasting duration during night-time (1900–0659h). Eating episodes were defined as events which provided ≥50 kcal with a time interval between eating episodes of ≥15 minutes. Multiple linear regression with adjustment for potential confounders was used to examine the association of maternal night-fasting intervals and eating episodes with maternal glycaemia.

Result: Mean (standard deviation (SD)) night-fasting hours and eating episodes per day were 9.9 (1.6) hours and 4.2 (1.3) times per day, respectively; fasting and 2-hour glucose concentrations were 4.4 (0.5) and 6.6 (1.5) mmol/l, respectively. After adjustment for potential confounders, each hourly increase in night-fasting interval was associated with a 0.03 mmol/l decrease in fasting glucose (95% CI -0.06,–0.01), while each additional daily eating episode was associated with a 0.13 mmol/l increase in 2-hour glucose (95% CI 0.01, 0.25). Night-fasting intervals and daily eating episodes were not associated with 2-hour and fasting glucose, respectively.

Conclusion: Increased maternal night-fasting intervals and reduced eating episodes per day were associated with decreased fasting glucose and 2-hour glucose, respectively, in the late-second trimester of pregnancy. This points to potential alternative strategies to improve glycaemic control in pregnant women.