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A comparison of lifestyle during pregnancy against Australian recommendations of women with and without type 1 diabetes from the Environmental Determinants of Islet Autoimmunity study

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Nutrition is crucial to meet increased requirements during pregnancy and to optimise glycaemic control in pregnant women with type 1 diabetes (T1D). Australian women are generally not meeting dietary guidelines during pregnancy, however limited studies have investigated the diets of women with T1D during pregnancy. This study aimed to compare diet and levels of physical activity during pregnancy in women with and without T1D and to compare dietary intake against Australian Dietary Guidelines and Nutrient Reference Values. Diet was assessed during the third trimester using the Dietary Questionnaire for Epidemiological Studies Version 2 food frequency questionnaire⁽¹⁾ in a cohort of women from the Environmental Determinants of Islet Autoimmunity (ENDIA) study.⁽²⁾ Physical activity during pregnancy was measured once during each trimester using the self-administered Pregnancy Physical Activity Questionnaire.⁽³⁾ Data are presented as mean \pm standard deviation. 1154 women completed the questionnaires during pregnancy (T1D = 744, non-T1D = 410; 78% of ENDIA cohort). Women with T1D were younger (31.7 ± 4.6 yrs v. 33.2 ± 4.3 yrs; $p < 0.001$) and had a higher pre-pregnancy BMI compared with women without T1D (26.8 ± 5.7 kg/m² v. 25.6 ± 5.6 kg/m²; $p < 0.001$). Using principal components logistic regression, several dietary patterns which significantly differed between women with and without T1D were identified. Women with T1D were more likely to have a diet which was lower in carbohydrates and glycaemic load and higher in cholesterol and fatty acids (OR = 0.90, $p = 0.001$). Women with T1D were more likely to have a healthy dietary pattern (nuts, vegetables, fruit, fish, eggs and whole grains; OR = 1.10, $p = 0.04$) and less likely to have an unhealthy dietary pattern (takeaway foods, meat, refined grains and fruit juice; OR = 0.88, $p = 0.001$). Women were most likely to achieve fruit (42%) and dairy recommendations (48%) and least likely to achieve grains and vegetable recommendations (1%). Both groups were consuming above the adequate intake for sodium ($2,165 \pm 832$ mg), and less than half the recommended dietary intake for iron (11.2 ± 4.4 mg) and folate (234 ± 81 μ g) through diet. The majority were known to be taking folate (94%) and iron supplements (92%). Physical activity decreased across pregnancy in both groups, particularly during the third trimester ($p < 0.02$). Only 3.6% were smoking and 23% consumed alcohol during pregnancy. The majority of pregnant women with and without type 1 diabetes are not meeting the Australian Dietary Guidelines. Our findings reinforce the continued need for health promotion for pregnant women as a key priority to improve their own health but also that of future generations.

References

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