A randomized controlled trial investigating the effects of a low glycemic index diet on pregnancy outcomes in gestational diabetes mellitus

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Abstract

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A randomized controlled trial investigating the effects of a low glycemic index diet on pregnancy outcomes in gestational diabetes mellitus

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The prevalence of gestational diabetes mellitus (GDM) is rising. There is little evidence to demonstrate the effectiveness of one dietary therapy over another. We aimed to investigate the effect of a low glycemic index (GI) versus a conventional high fiber diet on pregnancy outcomes, neonatal anthropometry and maternal metabolic profile in GDM. Ninety-nine women (age: 26 – 42 y; mean ± SD pre-pregnancy BMI: 24 ± 5 kg/m²) diagnosed with GDM at an average of 26.0 (SD 4.2) wks gestation were randomized to follow either a low GI (LGI, n = 50; target GI ≈ 50) or a high fiber, moderate GI diet (HF, n = 49; target GI ≈ 60). Dietary intake was assessed by 3 day food records. Pregnancy outcomes were collected from medical records. The LGI group achieved a modestly lower GI than the HF group (mean ± SEM: 47 ± 1 vs 53 ± 1; p < 0.001). At birth, there was no significant difference in birth weight (LGI 3.3 ± 0.1 vs HF 3.3 ± 0.1 kg, p = 0.619), birth weight centile (LGI 52.5 ± 4.3 vs HF 52.2 ± 4.0, p = 0.969), prevalence of macrosomia (LGI 2.1 vs HF 6.7%, p = 0.157), insulin treatment (LGI 53 vs HF 65%, p = 0.251) or adverse pregnancy outcomes. There was no significant difference in GDM-related adverse pregnancy outcomes between low GI diet and high fiber diet. This study was registered at anzctr.org.au as ACTRN12608000218392.

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