

Association between non-alcoholic fatty liver disease in pregnancy (NAFLD) and maternal weight gain during pregnancy; a retrospective study

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Abstract

Non-alcoholic fatty liver disease (NAFLD) is one of the most widespread metabolic conditions worldwide. Evidence suggests that NAFLD in pregnancy is associated with several pregnancy outcomes, including changing maternal weight gain. However, the prevalence and association between adverse maternal outcomes following NAFLD are lacking in Sri Lanka. Therefore we conducted a study to determine the association between NAFLD and weight gain during pregnancy. We used secondary data obtained from a large population-based prospective cohort study (RaPCo). This was conducted in the Anuradhapura district among a random sample of pregnant mothers registered in the national antenatal care program from July to August 2019. The weight of the mother at the first visit was recorded. All mothers were offered an ultrasound scan to diagnose fatty liver, and mothers were categorized according to ultrasound scan (USS) criteria into fatty liver grade 0, I, II and, III (FLG 0–III). All mothers were followed-up until delivery, and weight at the delivery was taken from the antenatal record. For the final analysis, 482 mothers were included. The mean age was 29.0 years (SD 5.6). Among them, 180 (37.3%) were diagnosed with FLG I, 67 (13.9%) had FLG II, while non-of pregnant women had FLG III. The total proportion of fatty liver was 51.2%. The mean weight gain of women who are in NAFLD grade 0 was 10.3 (SD- 4.2), fatty liver grade I was 9.9 (SD- 4.9), grade II was 8.8 (SD- 4.8). FLG II showed statistically significant lower weight gain ($p<0.05$) in comparison to FLG 0. After adjusting for the confounding factors, the significance of FLG II disappeared, and body mass index (BMI) and period of gestation (POG) at delivery remained the independent predictors of pregnancy weight gain. The reason behind the disappearance of significance in the multivariable analysis could be collinearity existing between FLG and BMI, as mothers with higher BMI are getting lower weight during pregnancy. Also, weight gain is known to be high with a higher pregnancy duration. As a result, this study concludes that there is no independent association between pregnancy weight gain.

Keywords: NAFLD, pregnancy weight gain, Sri Lanka

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