

## **Maternal anti-inflammatory diet profile at 20 weeks is associated with a lower risk of Small for Gestational Age newborns in a Mediterranean area**

Benitez L, Castro-Barquero S, Casas R, Crispi F, Larroya M, Youssef L, Casas I, Ruiz-León A, Vieta E, Estruch R, Gratacós E, Crovetto F.  
Hospital Clinic de Barcelona, Barcelona, Spain

### **Objective**

To evaluate whether a lower Dietary Inflammatory Index (DII) score is associated to Mediterranean diet (MedDiet) adherence and pregnancy outcomes.

### **Methods**

At 19-23 weeks' gestation, 1028 pregnant women were recruited (2017-2019). Dietary information was assessed by a nutritionist, using a 17-item dietary score to evaluate MedDiet adherence and a validated 151-Food Frequency Questionnaire. DII score according to 33 food and nutritional pro-inflammatory and anti-inflammatory items. Participants were distributed into tertiles according to the DII score, where a lower DII score (1<sup>st</sup> tertile) represented an anti-inflammatory diet and the 3<sup>rd</sup> tertile represented the more pro-inflammatory diet. Small for gestational age (SGA) was defined as birthweight <10<sup>th</sup> centile and severe SGA <3<sup>rd</sup> centile. Logistic regression models adjusted for potential confounders were used to assess the association of the DII score with pregnancy outcomes, setting the 3<sup>rd</sup> tertile as the reference group.

### **Results**

Three hundred forty-two women (33.3%) with low DII score (1<sup>st</sup> tertile, anti-inflammatory) showed higher adherence to MedDiet score compared to 3<sup>rd</sup> tertile (pro-inflammatory): mean (SD) 9.15 (2.3) vs. 6.21 (2.2),  $p < 0.05$ . In a multivariate analysis, the anti-inflammatory diet (1<sup>st</sup> tertile) was significantly associated with a lower prevalence of SGA newborns (adjusted OR=0.20; 95% CI: 0.04-0.93,  $p=0.04$ ), and of severe SGA (adjusted OR=0.05; 95% CI 0-0.96,  $p=0.046$ ). No significant associations were observed with preeclampsia, gestational diabetes, or preterm birth.

### **Conclusion**

At mid gestation, pregnant women with an anti-inflammatory diet profile showed a higher adherence to MedDiet and a lower risk to have an SGA newborn. Nutritional interventions during pregnancy aiming to improve dietary patterns could be an effective target to improve pregnancy outcomes.