7. Main Conferences and Abstracts

ABSTRACT A 1.5 - FOLIC ACID

FOLIC ACID SUPPLEMENTATION BEFORE CONCEPTION AND CHANCE OF A TWIN PREGNANCY. PRELIMINARY RESULTS FROM AN ITALIAN CASE-CONTROL STUDY

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Italian physicians recommend, to women who are planning a pregnancy, to assume 400 mcg/day of folic acid (FA) for at least one month before conception and during the 1st trimester of pregnancy in order to prevent neural tube defects in the newborn. There is some evidence, not always confirmed, that FA intake could increase the probability of having a twin pregnancy. In 2008, the Italian Twin Registry started a case control study on 500 twin mothers and 500 singleton mothers with the aim of investigating if folic acid supplementation enhances the probability of a twin delivery, taking into account factors such as maternal age at delivery, maternal weight and height before conception, use of assisted reproductive techniques, occurrence of twins in first degree relatives, coffee consumption and smoking before conception. The present analysis was performed on a preliminary sample of 329 cases and 303 controls. The overall prevalence of FA assumption before conception in our sample was 34.6%. In particular, prevalence of FA assumption was 45.6% in twins’ mothers and 22.8% in singletons’ mothers. Adjusting for maternal age, Assisted Reproduction Techniques (ART) use, coffee consumption and smoking before conception, maternal weight and height, the estimated relative risk of having a twin delivery given preconceptual FA assumption was 2.44 (95%CI: 1.6-3.8)) for dizygotic twins, while a weaker association was detected for monozygotic twins (OR=1.68, 95%CI: 0.9-3.1). These preliminary data show an increased risk of having a dizygotic twin delivery, given FA assumption before conception and a higher but not significant risk of a monozygotic pregnancy. This result needs to be confirmed and refined when the final complete dataset will be available. The second part of the study will investigate on possible gene-environment interactions between folic acid intake and MTHFR polymorphisms: DNA is up to now available for about 300 cases and 200 controls and sample collection is still undergoing. Furthermore, given the reported high prevalence of FA supplementation in twins’ mothers, a study on non-responders is being performed to check for a possible selection bias.