



Adherence to Mediterranean Diet

in a sample of women with gestational diabetes mellitus

A. Spadafranca^{1,2}, L. Lewandowski¹, L. Vona^{1,2}, S. Bertoli¹, A. Battezzati¹, E. Ferrazzi²

¹ICANS-DeFENS, University of Milan

²Department of Woman, Mother and Neonate, Buzzi Children's Hospital, Milan, Italy

Introduction

Gestational Diabetes Mellitus (GDM), defined as carbohydrate intolerance with first onset or recognition in pregnancy, has been associated with many adverse maternal and newborn outcomes (maternal diabetes type II post partum, macrosomia, cesarean delivery).

Mediterranean Diet (Med Diet), in general population, is a dietary pattern associated to prevention of metabolic syndrome, weight gain, cardiovascular diseases and diabetes mellitus type II (Sofi F, 2013). There is a paucity of data on the adherence to Mediterranean Diet during pregnancy. The knowledge about dietary habits could be an important start point for dietary and lifestyle intervention in order to prevent obstetrical complications.

The **aim** of this study was to investigate, in pregnant women with GDM, nutritional status and the adherence to Mediterranean diet by validated questionnaire (Martinez et al 2004).

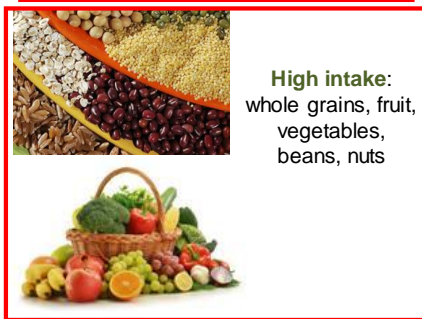
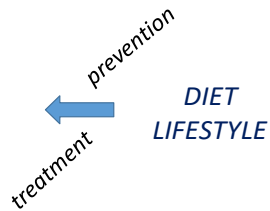
GESTATIONAL DIABETES MELLITUS

Non-modifiable risk factors

Age, etnia, familiarity

Modifiable risk factors

excessive weight gain
unbalanced diet



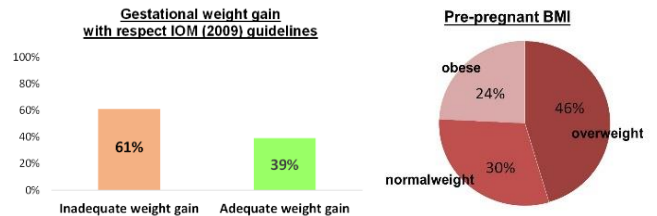
MEDITERRANEAN DIET

Methods

The study was carried out at the Department of Woman, Mother and Neonate, Buzzi Children's Hospital, Milan (Italy) and included women with GDM. Anthropometric measurements, Oral Test Tolerance Glucose and Mediterranean Diet Adherence, evaluated by score comprised between 0 and 13, were considered.

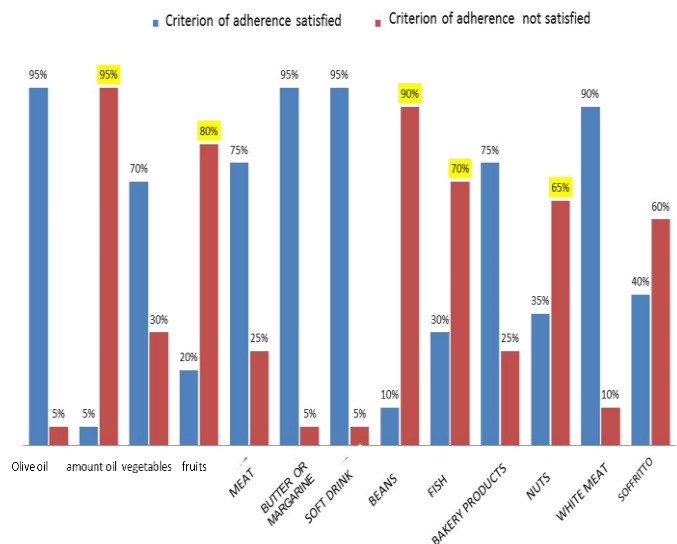
Results and Conclusions

The sample included 32 pregnant women (age: 34.7 ± 5.1 years; gestational age: 27.5 ± 5.5 weeks). 56% declared familiarity for diabetes. The mean pre-pregnant body mass Index of the sample was 26.8 ± 6.5 kg/m² and only the 39% was gaining adequately weight as recommended by IOM Guidelines (2009). 31.3% showed Impaired Fasting Glucose (mean basal glucose: 101.3 ± 4.8 mg/dl); 68.7% performed Oral Glucose Tolerance Test (OGTT), (basal glucose: 90.1 ± 10.3 mg/dl; 1 hour: 182 ± 7.3 mg/dl; 2 hours: 152 ± 8.1 mg/dl). **Fasting glucose was directly associated to maternal subscapular skinfold ($r=0.46$, $p=0.01$) and arm circumference ($r=0.35$, $p=0.05$).**



ADHERENCE TO MEDITERRANEAN DIET: at every satisfied criterion was assigned 1 point: a good adherence was defined for a score ≥ 8 . Mean score obtained was: 7.2 ± 2.2 . A Med Score ≥ 8 was found in 11 women (30%). Amount of olive oil, fruits, beans, fish and nuts were the items more critical. Interesting was to note as those food are important sources of fiber, healthy fats and healthy proteins that could have beneficial effects on glucose metabolism and inflammatory status.

Questions	Criterion of Adherence
01) Do you use every day olive oil ?	yes
02) If yes, how much?	≥ 4 spoons
03) How many servings of vegetables do you consume every day?	≥ 2
04) How many serving of fruits do you consume every day?	≥ 3
05) Do you eat meat every day? If yes how many servings?	< 1
06) How much butter or margarine or cream coonsume every day?	< 1
07) How many glasses of soft drink do you drink every day?	< 1
08) How many servings of beans do you consume every week?	≥ 3
09) How many servings of fish do you consume every week?	≥ 3
10) How many times do you consume bakery products every week?	< 3
11) How many servings of nuts do you consume every week?	≥ 3
12) Do you consume preferably white meat?	Yes
13) How many times do you use soffritto every week?	≥ 2



Nutritional interventions to control gestational weight gain and to increase adherence to Mediterranean Diet focusing to increase vegetables, nuts, beans and fish intake should be encouraged in the prevention and treatment of GDM.

References

- Martinez-Gonzalez MA, Fernandez-Jarne E, Serrano-Martinez M et al. Development of a short dietary questionnaire for the quantitative estimation of adherence to a cardioprotective Mediterranean diet. Eur J Clin Nutr 2004; 58: 1550-1552.
- Sofi F, Macchi C, Abbate R. Mediterranean diet and health. BioFactors 2013; 39:335-342