

PhD project 2016 ECM Experimental Clinical Medicine

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Diabetes mellitus is a chronic disease, affecting millions of people with increasing prevalence. Pregnancy is a moment of crucial importance for every woman, and the well being of the mother reflects on the intrauterine environment with long lasting consequences on health and development of the newborn.

The field of diabetes and pregnancy encompasses:

- pregnancies occurring in women with preexisting diabetes
- women who develop gestational diabetes.

The department has ongoing research in both fields. Diabetes in pregnancy is still considered a high-risk condition for both mother and baby. Even in the best centres, malformation and mortality rates are reportedly two- to fivefold higher than in the background population. Although significant improvements in outcomes may be achieved by careful pregnancy planning, rates of women attending preconception clinic remain obstinately poor. The increasing burden of type 2 diabetes mellitus is now showing its impact on pregnancies, with similarly poor outcomes to type 1 diabetes. Guidelines by endocrinological and gynecological societies suggest that these women should be cared with a multidisciplinary team approach, paying attention to all the different aspects of their pregnancy. In Italy there are specific guidelines made by the Società Italiana di Diabetologia, but there is a great variability in the clinical management policies implemented by local hospitals and there are no population-based epidemiological data.

The proposed project for the PhD student aims at implementing a monitoring program of pregnancy outcomes in women with pre-gestational or gestational diabetes in the Lombardy region:

- by analysing data from multiple health care databases [prescriptions, copayment and CEDAP (certificate of assistance to delivery)]
- by analysing data from a multicenter observational study conducted at all regional Diabetes & Pregnancy clinics
- by validating tools to identify the CEDAP (certificate of assistance to delivery) of women with diabetes that if implemented either at the regional and the national level would allow monitoring pregnancy outcomes overtime within a population-based frame

Furthermore, the PhD student will be involved in designing and implementing a project aiming at reducing the occurrence of severe hypoglycaemia in newborns of mothers with diabetes using early breast feeding.

A Prepregnancy Care Program for Women With Diabetes: Effective and Cost Saving. Egan AM, Danyliv A, Carmody L, Kirwan B, Dunne FP. *J Clin Endocrinol Metab.* 2016 Apr;101(4):1807-15. doi: 10.1210/jc.2015-4046. Epub 2016 Feb 26. PMID:26918293

Screening for gestational diabetes in the Lombardy region: A population-based study. Nicotra F, Molinari C, Dozio N, Castiglioni MT, Ibrahim B, Zambon A, Corrao G, Scavini M. *Diabetes Metab.* 2015 Sep;41(4):319-25. doi: 10.1016/j.diabet.2014.11.008. Epub 2014 Dec 16. PMID:25530450

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