Gestational Diabetes Mellitus: the importance of the production in knowledge

In 2016, the World Health Organization (WHO) adopted the word diabetes as its annual campaign and launched its first global report[1] on the disease. This report relates diabetes mellitus (DM) as one of the main public health problems in the world and estimated a 422 million of diabetic individuals in 2014. According to the document,[1] the overall prevalence of diabetes has almost doubled since 1980 from 4.7% to 8.5% in the adult population in 2014, generating a global expenditure of billion dollars spent with direct and indirect costs related to the disease.[2]

There are three main types of diabetes, type I, type II and gestational diabetes mellitus (GDM). The latter is a frequent complication during pregnancy and is defined as at any degree of glucose intolerance with first recognition during pregnancy.[3,4] The physiopathology of the disease is similar to type II diabetes mellitus associating to as insulin resistance as to the decrease of the pancreatic beta cells function.[5-7]

The GDM increases the risk of adverse perinatal outcomes as the maternal and perinatal mortality, miscarriage, macrosomia, tocotrauma, I.C.U. admissions, neonatal hypoglycemia and hypocalcemia, jaundice, infections and congenital malformations.[8] In addition, this causes problems for the conceptus, as for an unfavorable environment in intrauterine life influences the process of the cellular differentiation and results in consequences for the entire life, as Barker *et al*.[9] demonstrated.

Several studies sustain that hyperglycemia in intrauterine life predisposes these fetuses to obesity, metabolic syndrome, cardiovascular disease and some types of cancers in adulthood.[10,11] This vicious cycle can help explain the epidemic of metabolic diseases which reaches the developed and developing countries such as Brazil.

Dietary interventions, physical exercise, self monitoring of glucose levels of the blood and behavioral interventions have been adopted in GDM management, although it constitutes in different approaches, good results have demonstrated in the reduction of adverse maternal and perinatal outcomes. The interventions which adopt low glycemic index diet and increase levels of physical activity seem to have better results due to the reduction of the glucose level in the maternal blood and the necessity of insulin during pregnancy providing a decrease of weight gain. However, a standard protocol for the GDM management is still not used.[12]

The GDM is one of the most frequent medical complications in pregnancy throughout the world and can affect 1% to 35% of pregnant women depending on the population and the diagnostic criteria used.[2] To perform the GDM diagnosis, some criteria are used which have been undergoing some changes since the 1960´s. The great obstacle of GDM diagnostics and consequently, a reliable determination of its epidemiological data, are the lack of international uniformity for the inquiry and its diagnostic.[3]

Hyperglycemia and Adverse Pregnancy outcome (HAPO) an observational study, has great importance in the evolution of GDM diagnostics and aimed to determine a cut-off point that would establish a relationship between maternal hyperglycemia and the risks of adverse perinatal outcomes.[3]

From the findings of HAPO study, the Associação Internacional de Diabetes e Gestação -IADPSG (International Association of Diabetes and Pregnancy) recommendation of GDM diagnosis to follow the values considered as a borderline: fasting glycemia levels up to 92 mg/dL; up to 180 mg/dlL one hour after an overload of 75 g glucose; and maximum value of 153 mg/dL, two hours after an overload of 75 g glucose.[13] An alteration of at least one of these values is enough for GDM diagnosis. The assessment is performed between the 24th and 28th weeks of gestation.[3]

In 2013, WHO published GDM diagnostic criteria using the same cutoff points submitted by IADPSG, mentioned that fasting glucose greater or equal to 126 mg/dL or after an overload of above 200 mg/dL would be diagnostic as a criteria for clinical diabetes mellitus and not for GDM.[14] However, these criteria do not pre-

sent a global consensus.

Taking into consideration the continuous changes in GDM diagnosis, epidemiological data could suffer great variations due to the new diagnostic classification quoted previously. Mainly because, an altered value is sufficient to establish the diagnostic. And so, the expectation is that, there should be an increase of incidence and prevalence values in the coming studies in this area.[15]

However, new studies on GDM can provide an opportunity for a better understanding of the development of this disease, frequency, risk factors, treatment and prevention contributing to revert this serious and growing disease. It is noteworthy that 15% to 50% of women with GDM are at risk of developing diabetes or glucose intolerance after pregnancy.[16] Thus, the reduction of these cases could have an effect on the decrease of the incidence of clinical diabetes.

Encountering with this reality, the production and dissemination of knowledge in this area, addition to the development of programs to prevent and control hyperglycemia in pregnancy are important allies to reduce complications in pregnancies and adverse perinatal outcomes associated to GDM, and preventing chronic diseases and long-term cardiovascular, as for the mother with GDM and for the baby as well.

As a journal, the scope is maternal and child health, we could not miss this opportunity to publish this exciting and current topic. Thus, we take the opportunity to invite all the interested parties to submit their papers, to which the journal has a great pleasure and mostly, the attention focused on good quality articles in being published. This becomes more relevant because it will be done exactly at the moment WHO offers such broad participation of researchers involved in women´s health research especially pregnant women.

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