

Reality of Preeclampsia in Colombian Pregnant Women

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Short Communication

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Hypertensive disorders of pregnancy complicate up to 10% of pregnancies worldwide, constituting one of the greatest causes of maternal and perinatal morbidity and mortality. Preeclampsia affects about 2-3% of all pregnancies in developed countries [1]. As well as, the incidence of preeclampsia has increased by 25% in the United State the past two decades. It's estimated that between 50,000 to 60,000 maternal deaths are related with preeclampsia per year worldwide [2].

In undeveloped and developing countries, between 10 to 15% of maternal deaths are associated with hypertensive disorders of pregnancy and this increase the perinatal mortality by five [1,3]. In Colombia, preeclampsia has an incidence of 7% of all pregnant women and causes a maternal mortality rate of 42 per 100,000 live births, significantly higher than developed countries [4].

In last decades, extensive research has been devoted to screening for preeclampsia using different biomarkers related with mother's characteristics and physiopathological changes of pregnancy. Most of them have as a main aims, first, to reduce the prevalence of the disease through pharmacologic intervention in the high-risk group and, second, to minimize adverse perinatal events for those who experience preeclampsia by the determination of the appropriate time and place for delivery [5]. The traditional approach to screening for preeclampsia was to identify risk factors from maternal demographic characteristics and medical history; however, it's important to remember that most cases of preeclampsia occur in healthy nulliparous women without obvious risk [6]. Other biomarkers can improve this early prediction of preeclampsia. Predicted

algorithms about preeclampsia combine maternal characteristics with uterine artery pulsatility index, mean arterial pressure and serum concentrations of various placental products [7-10].

A working hypothesis, defended by Nicolaides and colleagues, is that preeclampsia is a spectrum disorder whose severity is reflected in gestational age at the time of delivery. This, which is based on a survival time model, assumes that if the pregnancy was to continue indefinitely all women would develop preeclampsia. In this new approach, the effect of various risk factors is to modify the mean of the distribution of gestational age at preeclampsia. The appearance of preeclampsia would depend on a competition between delivery before or after development of preeclampsia [11].

The early definition of high risk group of pregnant women is essentially to improve maternal care in order to decrease fetal and maternal outcomes.

There is a large list of maternal factors which have been related with preeclampsia, but the most important ones include advancing maternal age over 35 years, increasing weight, Afro-Caribbean and South Asian racial origin, previous pregnancy with preeclampsia, conception by in-vitro fertilization and a medical history of chronic hypertension, pre-existing diabetes mellitus and systemic lupus erythematosus or Antiphospholipid syndrome.

Colombia has population with Afro and Afro-Caribbean racial origin, but most of them live at pacific and North Sea coasts. Most of the population has a mixed racial origin type Latin American similar than other Central and South American countries. Therefore, what happens in

Colombia where the prevalence of preeclampsia is so high? It's already talked that the prevalence in Europe and United States is about 2–3% and in Colombia it's about 7%, and this high prevalence it's not only found in Colombian coasts, it's also observed in all the country. It's striking that when Colombian women live in other countries this prevalence carries on too. Recently, a Canadian research group has published a retrospective population-based on a cohort study comparing the prevalence of preeclampsia in Canadian women and immigrant women who live in the same area. This study shows a rate of preeclampsia and preterm birth significantly higher for immigrant women from Nigeria (1.79, 95% confidence interval 1.12 to 2.84), the Philippines (1.54, 95% confidence interval 1.30 to 1.86) Colombia (1.68, 95% confidence interval 1.04 to 2.73), Jamaica (2.06, 95% confidence interval 1.66 to 2.57) and Ghana (2.12, 95% CI 1.40 to 3.21) [12]. It's important to remember that all of these countries except Colombia have population with high risk racial origin (Afro, Afro-Caribbean and South Asian).

In order to understand, why Colombian women have this high risk of developing hypertensive disorders, El Bosque University is carrying out a multicentre study in Bogota comparing the results of current predicted algorithms to preeclampsia and obstetric outcomes. This is an ambitious study which hopes understanding more about preeclampsia in Colombian population in order to reduce the rate of preeclampsia and its complications.

This study will finish in 2017, but preliminary data suggest that the most of the women who developed preeclampsia didn't have altered first trimester preeclampsia screening. It's needed more data, but it's important to think in different hypothesis, like, for example, if it could be another unknown strong factor that would affect Colombian population of pregnant women and modify predicted risk models.

Nowadays, there is a drug which can decrease preeclampsia's complications. The use of acetylsalicylic acid has demonstrated to improve prognostic of women with impaired placentation. The women with high risk of preeclampsia should begin this treatment before than 16 gestational weeks in order to improve perinatal outcomes. And we are working to be able to separate high risk population than low risk population. We need to know more about Colombian women in relation with hypertensive disorders, and also we need to understand why the most of them, who are not Afro-Caribbean or South Asian racial origin, have higher risk of these diseases than other developed countries and how they

maintain this rate when live in countries where preeclampsia's prevalence is fewer. Perhaps it's not only happening in Colombian women, maybe it's needed to redefine the maternal characteristic about racial origin and use the country of born in order to improve early screening of preeclampsia.

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