

Excessive Weight Gain in Pregnancy and Postpartum Weight Retention: a Comprehensive View on the Topic

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Introduction

More than a decade ago, World Health Organization declared that obesity had reached epidemic proportions [1]. It's unanimous that this condition has a multifactorial etiology and the excessive amount of weight gained in pregnancy and postpartum retention have been studied as potential contributors. Excessive weight during pregnancy can also affect the health of the mother and her infant. Consequences for the mother include increased risk for hypertension, gestational diabetes, complications during labor and unsuccessful breastfeeding; for the fetus it can cause stillbirth, newborns large for gestational age and possibly higher body mass index at older ages [2].

To better understand the problem of weight gain, psychological aspects of the future mother should be taken into account. A 2014 meta-synthesis comprising 17 papers has used an interpretative thematic synthesis approach within a social constructionist framework. It's interesting to watch that studies described that pregnant women saw their body image as protected from the socially constructed ideals, feeling that functional and mothering identities excused them from adhering to those ideals, including those women who were overweight before pregnancy. However, some articles reported that pregnant women had a tendency to feel anxious if they were not meeting others' weight gain expectations and comments from health professionals were reported to reinforce the belief that women should be in control of their bodies and their weight during pregnancy. In the same way, studies have noted that women reported that society expected them to return to their body weight control after birth, so, in many cases, this was perceived as a more relevant goal than controlling their weight during pregnancy. Nevertheless, in many women their high expectations about returning to their previous body image were defrauded and though pregnancy was a confirmation of womanhood it collided with the concept of femininity [3]. A more recent review has emphasized the complexity of body image experiences during perinatal period, but quantitative data is needed [4].

In this context, in 2013 we conducted a retrospective cohort study [5] at our local Primary Health Care Unit. The project was approved by the Unit's coordinator. The aim was to study the association between gestational weight gain and postpartum weight retention 6 to 12 months after delivery, according to their pre-pregnancy body mass index. We included a convenience sample of 96 pregnant women (mean age: 29,0 years) followed in our unit during 2010 and 2011. We consulted their clinical records for several data (among them, weight before and after pregnancy, height, parity, type of delivery, tobacco and alcohol consumption and Goodwin score). They were also inquired by telephone about how much did they weight at the end of the pregnancy. These women gave their oral consent to enter the

study. We used Microsoft Excel® 2010 and SPSS® 20.0 to analyze the results. T-test was used to test differences between groups.

Recommendations of weight gain during pregnancy according to body mass index developed by the Institute of Medicine² were considered to divide women into 3 categories: below, according to (reference group) and above recommendations. In our study 29.2% of women had increased weight beyond the recommended. We verified that there was a statistically significant association between weight gain in pregnancy above the recommendations and higher weight retention 6 to 12 months after delivery ($+ 2.8 \pm 1.4$ kg than women with adequate weight gain, who retained a mean of 1.1 ± 5.4 Kg).

By the time of our study we compared our results with a 2011 meta-analysis [6] which had demonstrated resembling results, except that we did not find a difference between weight gain below and according to the recommended, whereas they found a significant negative difference. Nevertheless, the same study showed that differences between the latter tended to dissipate over time, and the opposite happened between women who gained excessive weight in gestation in comparison with women with normal weight gain, in which differences tended to accentuate during a 15-year period.

This issue has been extensively addressed in scientific literature. MEDLINE search for studies in humans published in the last three years using the query with the MeSH terms "Pregnancy" AND "Weight gain" AND "Postpartum period" retrieved 74 results, 7 of which tested this association: 6 observational studies that support our findings [7-12] and one meta-analysis [13] that despite being in agreement with this relation described a U-shaped relationship of the mean postpartum weight difference between women with excessive gestational weight gain and women with adequate gain with time, difficult to explain but probably related to the few number of studies with long follow-up (>8,5 years) and the lack of consensus on how much time does "postpartum" mean. All the studies, including ours, demonstrated a well-established association between excessive gestational weight gain and higher postpartum weight retention at least in a short period of time after delivery. This relation is not neglectable as it is known that it tends to repeat in subsequent pregnancies with a snowball effect [14].

The importance of approaching this theme is related to the need to study interventions to minimize the effect of pregnancy's excessive weight gain in the development / aggravation of obesity. In a 2012 Cochrane review [15] authors concluded that there was not enough evidence to recommend any intervention for preventing excessive weight gain during pregnancy. Since that, at least 5 randomized controlled trials were published: HeLP-her [16], ROLO [17], LiP [18], Fit for delivery [19] and one cluster-randomized controlled trial about the efficacy of a lifestyle intervention [20]. All have shown promising

strategies such as: behaviour change lifestyle sessions accompanied by mobile phone text messages/calls, healthy lifestyle postcards, written information or availability to contact dietician at any time, and self-monitoring. Academy of Nutrition and Dietetics released a practice paper suggesting that pregnant women don't need extra energy intake before the second trimester; after that it is recommended an extra energy of 340 kcal per day in the second trimester and 452 kcal in the third trimester [21]. Further research about the effectiveness and safety of these measures is necessary.

In the future, psychological aspects, discussed at the beginning of this article, must also be a matter of attention as myths on gestational weight gain persist. For example, in one study women recognized low gestational weight gain as a risk for infants, yet none said that excessive maternal gain could be detrimental to the infant beyond higher birth weight what may mean that there is no incentive to avoid high gestational weight gain [20]. In another study, carried out in low-income african-american mothers, results were similar and mothers believed that excess of food intake was better for their babies [22].

Thus, Family Doctors and Obstetritions must be aware of the problem of excessive weight gain during pregnancy, its complications, contributive factors and possible interventions to minimize it.

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