Midwifery 49 (2017) 134–141

Contents lists available at ScienceDirect

Midwifery

journal homepage: www.elsevier.com/midw

Postpartum weight trajectories in overweight and lean women ☆

Annick Bogaerts, Mw, MSc, PhD(Professor)[a,b,c,*], Elyne De Baetselier, RN, Master student[a], Lieveke Ameye, MSc, PhD (Biostatistician)[b], Tinne Dilles, RN, MSc PhD(Professor)[a], Bart Van Rompaey, RN, MSC, PhD(Professor)[a], Roland Devlieger, MD PhD(Professor)[b,d,e]

[a] Faculty of Medicine and Health Sciences, Centre for Research and Innovation in Care (CRIC), University of Antwerp, Belgium
[b] Department of Development and Regeneration KU Leuven, University of Leuven, Leuven, Belgium
[c] Faculty of Health and Social Work, Research Unit Healthy Living, UC Leuven-Limburg, Belgium
[d] Department of Obstetrics and Gynecology, University Hospitals KU Leuven, Leuven, Belgium
[e] Department of Obstetrics, Gynecology and Fertility, GZA Sint-Augustinus, Wilrijk, Belgium

ARTICLE INFO

Article history:
Received 11 June 2016
Received in revised form
11 August 2016
Accepted 31 August 2016

Keywords:
Postpartum
Maternal weight trajectory
Postpartum weight retention
Weight management
Obesity

ABSTRACT

Background: overweight and obesity in women of reproductive age are increasing and are often linked with excessive weight gain in pregnancy and weight retention after birth. Studies on spontaneous maternal weight trajectory after childbirth are scarce.
Objective: we describe women's spontaneous weight trajectory during the first six weeks of the postpartum period and its relationship between Body Mass Index and socio-demographical, behavioural and psychological variables.
Design: data from 212 women who gave birth in three regional hospitals were collected prospectively between December 2015 and February 2016. Potential determinants were examined during pregnancy and the postpartum period at four and six weeks after childbirth. Descriptive statistics and a linear multivariate regression model were used. Early postnatal weight retention (PWR) was defined as the difference between the maternal weight six weeks after childbirth and the pre-pregnancy weight (kg).
Measurements and findings: mean PWR at six weeks after childbirth was 3.3 kg (SD 4.1), with a range between −7 and +16.2 kg; 81% reported some weight retention (PWR > 0 kg), and 36% showed a high weight retention (PWR ≥ 5 kg). Women with a BMI < 25 kg/m^2 showed a significantly higher mean PWR six weeks after childbirth compared to women with a BMI ≥ 25 kg/m^2 (4.0 kg versus 1.6 kg, $p=0.002$). There was a significant correlation between maternal weight retention and gestational weight gain (GWG) ($B=0.65$, $p<0.001$) and pre-pregnancy body mass index < 25 kg/m^2 ($B=1.12$, $p=0.017$), six weeks after childbirth.
Key conclusions: weight retention six weeks after childbirth is associated with pre-pregnancy BMI and GWG, but contrary to expectations, lean women with excessive GWG tended to retain most weight after childbirth. No significant associations with several socio-demographical, behavioural and psychological variables were found.
Implications for practice: weight management strategies around pregnancy should not be limited to overweight and obese mothers. Women with pre-pregnancy BMI < 25 kg/m^2 require equal attention to prevent postnatal weight retention.

© 2016 Elsevier Ltd. All rights reserved.

Introduction

Since 1980, the incidence of overweight and obesity has doubled worldwide. With more than 1.5 billion overweight adults, at least 500 million of whom are obese, obesity has become a disease of pandemic proportions (James, 2008). Paralleling the global epidemic of obesity figures in the general population, the incidence of maternal obesity (BMI > 30 kg/m^2 at the start of pregnancy) has been rising, ranging from 7% to 25% (Devlieger et al., 2016). Data on the prevalence of maternal obesity from 34 UK maternity units show a significant increase of first trimester maternal obesity, rising from 7.6% (1989) to 15.6% (2007) (Heslehurst et al., 2010). It has been estimated that around half the women of reproductive age are overweight or obese. A Belgian national health survey reported that 48% of the general population was either overweight (body mass index (BMI) ≥ 25 kg/m^2, 34%), or

☆This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.
* Correspondence to: University of Antwerp, Universiteitsplein, 1, 2610 Wilrijk, Belgium.
E-mail address: Annick.bogaerts@ucll.be.(A. Bogaerts)

http://dx.doi.org/10.1016/j.midw.2016.08.010
0266-6138/© 2016 Elsevier Ltd. All rights reserved.

obese (BMI ≥ 30 kg/m^2, 14%) (Gisle et al., 2014). A regional representative analysis of 65 maternity units in Flanders (the Northern part of Belgium), showed a significantly increase in the prevalence of maternal obesity between 2009 (10,2%) and 2014 (11,4%); and more than one in three pregnant women is overweight (Devlieger et al., 2016).

The largest increase in overweight and obesity in women occurs in childbearing age (Martin et al., 2015). Obesity in women is often linked with weight gained during and retained after pregnancy (Vahratian, 2009; van Poppel et al., 2012). Approximately one third of the gestational weight gain (GWG) is attributable to the weight of the growing fetus, amniotic fluid and placenta, which means that two thirds are related to maternal factors (Institute of Medicine et al., 2009) The Institute of Medicine (IOM) has published recommendations for ranges of GWG by pre-pregnancy BMI. To prevent the long term development of maternal obesity, it is recommended that underweight women (BMI < 18.5 kg/m^2) gain 12.5 to 18 kg, normal weight women (BMI 18.5–24.9 kg/m^2) 11.5 to 16 kg, overweighed women 7 to 11.5 kg and obese women 5–9 kg (Institute of Medicine et al., 2009). Despite the IOM recommendations, most studies report an excessive GWG in one third of women (Gore et al., 2003; Institute of Medicine et al., 2009; Bogaerts et al., 2012). Obesity during pregnancy is a major public health concern because of the increased risks for both the mother and child. Complications are even higher when maternal obesity is combined with excessive GWG, especially the increased risk of caesarean section, macrosomia and postpartum weight retention (Nohr et al., 2008; Bogaerts et al., 2012).

The postpartum period is most often defined as the period after childbirth up to six weeks or even up to one year post partum (Schmitt et al., 2007). Many women fail to lose their pregnancy weight during this period. According to the IOM, about 50% of all mothers reach their pre-conceptional weight six weeks after childbirth. However, one year after childbirth, 25% are still struggling with an excess of at least 5 kg in comparison with their pre-pregnancy weight. A high postpartum weight retention (PWR) of 5 kg or more is a major risk factor for long-term illhealth, including continuous weight gain and increased risk for life-long obesity, metabolic syndrome, cardiovascular diseases and Type 2 diabetes (Walker, 2007; Althuizen et al., 2011; Gould Rothberg et al., 2011; Lipsky et al. 2012; Phelan et al., 2015). Moreover, the risk of pregnancy and birth complications increases in the next pregnancy if women fail to lose the added weight between pregnancies (illamor and Cnattingius, 2006; Bogaerts et al., 2013c).

Changes in maternal behaviour that lead to a healthy lifestyle during the postnatal period are possible but challenging (Bertz et al., 2012). The effects of breastfeeding on maternal weight change are not clear. In a recent systematic review, the majority of studies reported little or no association between breastfeeding and weight change (Neville et al., 2014). However some publications found that breastfeeding can contribute to reducing long-term weight retention (Brown et al., 2012; Ostbye et al., 2012; Wiklund et al., 2012; Kirkegaard et al., 2015; Stang and Huffman, 2016;). Results from systematic reviews and meta-analysis about effects of lifestyle interventions to limit PWR show positive effects on weight loss; however, the optimal setting and approach remains unclear (van der Pligt, et al., 2013). The most effective interventions in reducing weight in postpartum women were exercise programmes with objectively defined goals, such as the use of heart rate monitors or pedometer (mean difference of −4.09 kg, 95% CI −4.94 to −3.25, I^2=0%) and exercise combined with intensive dietary intervention (mean difference of −4.34 kg, 95% CI −5.15 to −3.52, I^2=0%) (van der Pligt et al., 2013; Nascimento et al., 2014).

Prior to developing a targeted lifestyle programme to limit short and long term PWR, it is important first to describe the spontaneous postnatal weight trajectory, as this information is scarce in the current literature. An older American study (Gunderson et al., 2001) with 985 healthy women who had two consecutive births showed that early PWR (< 6/8 weeks after childbirth) does not vary according to maternal pre-pregnancy BMI, and that in the longer run (median of two years), obese women showed a slower weight loss. A more recent study describing weight change patterns in six sites of the World Health Organization (WHO) Multicentre Growth Reference Study (MGRS) at weeks 1, 2, 4, 6, then monthly from two to 12 months and finally bimonthly until 24 months after childbirth, indicated that lactation intensity and duration explained little of the variation in weight change patterns and that ethno-cultural contexts should be taken into account to explain differences in weight change patterns (Onyango et al., 2011).

An earlier epidemiological analysis in nearly 8000 women with two consecutive pregnancies, showed that approximately 50% of women with excessive GWG in the previous pregnancy had not returned to their pre-pregnancy BMI at start of the next pregnancy (Bogaerts et al., 2013c). The spontaneous weight trajectory in the immediate postpartum period however has not yet been studied. This is needed to differentiate GWG retention from weight fluctuation in the late postpartum period. The aim of this study was therefore to conduct a cohort study to investigate the spontaneous weight trajectory between the second day and the sixth week post partum and to describe the influencing variables on PWR in the early post partum (up to six weeks).

Methods

Study design and setting

We performed a prospective longitudinal cohort study to investigate the spontaneous weight trajectory after childbirth and to identify the variables that could predict PPWR up to six weeks after childbirth. From December 2015 until February 2016, mothers were recruited in the maternity wards of three Antwerp Hospitals: the University Hospital of Antwerp, Sint-Augustinus and Sint-Vincentius. The study design was approved by the Central Medical Ethics Committee of the University Hospital of Antwerp and by the local Ethics Committees of the collaborating hospitals. All participants provided written informed consent upon entry in the study two or three days after childbirth.

Participants

Mothers (age ≥ 18 years) of singletons born at term and with a good knowledge of the local language (Dutch) were included into the study at random week and weekend days two or three after childbirth. All women were in possession of a digital weight scale at home. Women with diabetes, pregnancy induced hypertension, or (pre)eclampsia were excluded because weight changes could be associated with these pathologies.

Variables

GWG was calculated as the last measured maternal weight in pregnancy minus a self-reported pre-pregnancy weight. If the last measured weight dated from more than two weeks before childbirth, the self-reported final weight at childbirth was used. PWR was calculated as self-reported maternal weight six weeks after childbirth minus self-reported pre-pregnancy weight. Pre-pregnancy weight was reported by the participants at the time of study entry (day 2/3). Women were weighed at study entry with a calibrated SECA 803 scale and their height was measured with a

Download English Version:

https://daneshyari.com/en/article/5122229

Download Persian Version:

https://daneshyari.com/article/5122229

Daneshyari.com