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### Pregnancy and Obesity: Facts and Complications

Jawad Kamoune, Mehdi Bouchareb, Amina Daoudi, Karima Maggouh, Z.Tazi, A. Filali, R.Bezad and M.H.Alami  
National Centre of Reproductive Health, CHIS Mohamed V University, Rabat, Morocco.

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#### ABSTRACT

The obesity is a factor of morbidity and mortality and considered as a real health public problem. Obesity can have adverse consequences on fertility and on the obstetric side, obesity can lead to several complications, which classifies these pregnancies as at-risk pregnancies. In order to improve maternal and neonatal outcomes, our practices need to take into account these complications by ensuring adequate and premature care to improve the maternal and neonatal outcomes.

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#### Introduction

According to the Obepil survey conducted between 1997 and 2012, the prevalence of obesity and overweight has increased significantly among women of childbearing age, currently less than 2/3 of these women are of normal weight, so problems related to overweight are among the most frequently encountered by those involved in the management of pregnancy, obesity is accompanied by profound alterations in the general and hormonal metabolism [3,6]. Weight gain during pregnancy is a complex physiological process that accompanies increased fetal weight, during normal pregnancy weight gain ranges from 10 kg to 17 kg [7]. It is based on the Body Mass Index (BMI), which is used to estimate a person's corpulence by the ratio of body weight (in kg) to the square of height (in meters). Defined different classes of BMI (BMI <18.5: underweight, 18.5≤BMI <25: normal weight, 25 ≤ BMI <30 overweight, 30 ≤BMI <35: obesity class I, 35 ≤ BMI <40: obese class II or severe, BMI ≥ 40: obesity class III or massive) [8].

#### Discussion

It has been known for many years that obesity is involved in female reproduction: the risk of early puberty is higher among obese girls; obesity is an aggravating factor of a possible underlying polycystic ovarian syndrome. On the other hand, these women have an increase in the number of miscarriages (the mechanisms that explain these disturbances are multifactorial and complex), finally they have a decrease in fertility with impaired results of AMP [1,2,8].

Obesity induces changes in the glucido-lipid metabolism but also hormonal, it causes fertility disorders in women, overweight and obesity are also a brake to lactation given a delay in the initiation of lactogens [3].

A synthesis of obstetric complications related to maternal obesity and factors in optimizing the course of pregnancy in these patients:

##### During pregnancy

##### Maternal complications

During pregnancy, it has been clearly demonstrated that obesity is an independent risk factor for the onset of

pregnancy-induced hypertension or preeclampsia, endothelial dysfunction due to insulin resistance and a direct effect of obesity on implantation may explain the occurrence of these complications, reflecting a phenomenon of placental insufficiency [8].

Physiologically, in all pregnant women, there is a tendency for insulin resistance from the second trimester of pregnancy. The existence of a hyperinsulinism with insulin resistance in case of obesity thus favors the occurrence of a GD, moreover, there is a linear relation between the increase of the BMI and the risk of appearance of a GD [3,4,8].

Pregnancy is characterized by a decrease in fibrinolysis and an increase in coagulation factors causing a procoagulant condition. Obesity increases the risk of venous thrombosis by a factor of 2 to 5 by promoting venous stasis, by increasing blood viscosity and activation of coagulation and by generating a pro-inflammatory state that is a source of endothelial dysfunction (4,8)

##### Fetal complications

Pregnancy in obese women is accompanied by a high rate of fetal macrosomia, regardless of the notion of GD. The risk of macrosomia depends, on the one hand, on the previous weight and, on the other hand, weight gain during pregnancy.

Weight gain of more than 14 kg in obese patients increases the risk of having a child with a macrosomia by 2 to 3 times [10].

In case of obesity, there is a higher rate of congenital malformations including the frequency of abnormalities of closure of the neural tube, is increased also the risk of omphalocele, cardiac anomaly and polymalformative syndrome increased in cases of maternal obesity. Maternal obesity is associated with an increased risk of Fetal death in utero (FDIU) and early neonatal death [8,10].

##### During the labor

Post-term Pregnancy is more common in obese patients. Labor induction rates are also increased, with more failure than in normal weight patients. The duration of labor is increased, which may explain a more frequent use of oxytocin.

The use of an instrumental extraction is also more frequent, and the risk of shoulder dystocia is multiplied by a factor 2 to 3, increasing the risk of neonatal trauma, especially fracture, brachial-obstetric plexus or perinatal anoxia [9,10]. In the obese woman, there are more therapeutic labor inductions and a higher rate of cesarean section, especially for foeto-pelvic disproportion, but also for fetal distress and failure of induction [5].

Equipment (delivery beds, intervention tables) adapted to obesity are necessary in the labor room. It is also recommended to write a procedure of care in maternity wards. It is necessary to have easy access to an ultrasound system to guide the identification of the epidural space but also to set up peripheral or central venous access. The use of invasive monitoring of blood pressure is also more common. Care teams should be trained in the management of obese patients, also highlighting the need to preserve the dignity of women. Appropriate compression stockings, pneumatic compression systems and thromboprophylaxis should be used to prevent thromboembolic complications [6].

#### **During the post-partum**

Whether birth occurs vaginally or by cesarean section, there is an increased risk of postpartum complications. The frequency of postpartum haemorrhage is increased, contributing, with the increase in caesarean section, to an important risk of anemia. Infectious complications are also increased, obese patients have more urinary tract infections, vaginal infections and wall abscess. Finally, the postpartum period is the most at risk for thromboembolic complications, especially in cases of cesarean birth [8].

#### **Conclusion**

Because of its frequency and its complications, the obesity of the pregnant woman poses a real public health problem. Its consequences must be well known by the different categories of health professionals involved in the follow-up, in order to allow a true individualized multidisciplinary care.

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