Addison's disease and pregnancy: case report

Caterina Cosimo
Ciro Franco

Artemisia Fetal Maternal Medical Centre, Rome (Italy)

Corresponding Author: Franco Ciro
V. Raffaele Calzini, 14 (F24)
cap: 00159; Roma - Italy
e-mail: francociro@tiscali.it
tel.: +39 3495565247; fax: +39 06233207477

Summary

Background. **Addisonian crises, a rare but life-threatening event in pregnant women, may accompany stressful conditions such as labor, puerperium, infection, hyperemesis gravidarum or surgery.** ***Case.*** **A 36-year-old woman, primigravida, with Addison's disease, diagnosed when she was 10 year-old and treated with cortisone and fludrocortisone. The therapy was regulated to avoid adrenal crisis during pregnancy. The woman underwent to caesarean section at 38th week and gave birth to a normal baby.** ***Conclusion.*** **The successful management of pregnant women with Addison's disease, regarding her state and that of the foetus, reassures those women that nowadays Addison's disease and pregnancy are not incompatible when proper monitoring and management is provided.**

Introduction

Primary adrenocortical insufficiency, or Addison's disease, is a rare endocrine disorder and is even rarer in pregnancy. Non treated primary insufficiency reduces fertility. Idiopathic autoimmune adrenalitis is responsible for the majority of the cases. Addisonian crises, a rare but life-threatening event in pregnant women, may accompany stressful conditions such as labor, puerperium, infection, hyperemesis gravidarum or surgery (1, 2). Adrenocortical insufficiency is also related to an higher incidence of serious foetal complications until intrauterine death (3). With introduction of glucocorticoid therapy, pregnancy has become less risky for addisonian women. Maternal mortality has been reduced from 45% of 1930 to 7% of 1948-1955 until to 0,7% of 2000 (4). We describe herein the multidisciplinary management of an Addisonian patient that resulted in both maternal and fetal successful outcome.

Case Report

A 36-year-old woman, primigravida, with Addison's disease, diagnosed when she was 10 year-old and treated with cortisone (25 mg x 3/day) and fludrocortisone (0,1 mg/day).
She was admitted at our clinic during the 11st week of her gestation. Ultrasonography revealed a single pregnancy with a Crown-Rump Length (CRL= 45 mm), corresponding to the median age of 10th week of gestation. Blood hormonal check done before pregnancy showed a condition of adrenal insufficiency (DHEA: 0.12 µg/L (n.v.: 1-7.5 µg/L), DHEA-S: 1.6 µg/L (n.v.: 35-40 µg/L), ACTH: 102 pg/ml (n.v.:1-40 pg/mL), thus the endocrinologist increased hormonal therapy in particularly that of fludrocortisone to 0,25 mg/day. The hormonal blood check done at 11th week showed a normal value of cortisol (27 µg/dL (n.v.: 8-30 µg/dL) and an elevated value of ACTH (201 pg/mL (n.v.:1-40 pg/mL).
At 17th week of gestation the patient underwent to amniocentesis which revealed a normal XY-cariotype. At 19th week the blood check showed: ACTH 95 pg/mL (n.v.:1-40 pg/mL) and cortisol 48 µg/dL (n.v.: 8-30 µg/dL). She underwent to ultrasonography at 21st week; biometry was normal (bi-parietal diameter: mm 55; occipito-frontal diameter: mm 68; femur: mm 41; humerus: mm 34) and no morphological anomalies were found.
At 22nd week the value of cortisol was 46 µg/dL and ACTH was 198 pg/ml and at 29th week of gestation the blood values were respectively 39 µg/dL and 199 pg/mL. During all pregnant time the blood values of plasma-electrolytes (m.v.: Na^+: 138-140 mEq/L; K^+: 4.2÷4.8 mEq/L), of glucose level (m.v.: 68÷76 mg/dL) and blood pressure (m.v.: 100/70 mmHg) were normal. At 25th week of gestation the dosage of fludrocortisone was reduced to 0.2 mg/day.
At 33rd week the estimated foetal weight was 1830 grams corresponding to the 25° centile of Lubchenco's curves of weight (5), and the amniotic fluid seemed reduced. Doppler velocimetry showed an increasing value of resistance to flow in umbilical artery (Pulsatile Index: 1, 10) a normal PI of medial cerebral artery (1, 52) and an increasing value of resistance in left uterine artery (R.I: 0,65) and normal value in right uterine artery (R.I.: 0,45).
At 35th week of gestation endocrinologist decrease the dosage of fludrocortisone to 0,1 mg/day.
At 36th weed of gestation estimated foetal weight was 2700 grams, corresponding to 25-50° centile of Lubchenco's weight curves, while amniotic fluid was reduced. Doppler velocimetry was altered in umbilical artery (PI: 1,18) while was normal in medial cerebral artery (PI: 1,47).
The patient underwent to caesarean section at 38th week. The newbon, an healthy male baby, weighted 2730 grams and his APGAR was 8/10.

Hydrocortisone 1 gram i.v. 24 hours before and after caesarean section was administered to the patient.
At follow-up both mother and baby have not health problems and maternal hormonal therapy was changed like pregravidic schedule (cortisone 25 mg x3/day and fludrocortisone 0,1 mg/day).

Comment

Prior to the introduction of steroid therapy, Addison's disease was associated with a high maternal mortality rate. However if it is diagnosed and treated adequately before the pregnancy, adverse effects are uncommon and there is successful maternal and foetus-neonatal outcome (1, 2).
In our case, according to other authors (6), it was necessary to increase dosage of fludrocortisone from 0,1 mg/day to 0,25 mg/day during the I trimester of pregnancy and to reduce it again in post-partum. The necessity to increase the dosage of fludrocortisone during the I trimester is quite frequent due to electrolytic and metabolic imbalance occurring because of hyperemesis during the I trimester. Thus is important to evaluate the maternal values of blood electrolytes, of blood pressure, of body weight and to perform ECG (6). Usually, during the II and III trimester of pregnancy it's not necessary to increase the dosage of the therapy unless stressful conditions, like infections, comes up. Some authors think that probably placental steroids have a beneficial effects on mother health and supply partial adrenal insufficiency (1). Both vaginal delivery and caesarean section are stressful conditions but women with Addison's disease are unable to produce the increased output of endogenous steroids that normally occurs and therefore parenteral hydrocortisone should be given. Also in this case hydrocortisone (1 gram i.v.) was given to mother before and after delivery. In 1962, Osler reported that birthweights of children of mothers with adrenal insufficiency average 500 g below normal (3). More recent reviews have suggested that, in terms of foetal complications, these pregnancies do not significantly deviate from pregnancies in healthy mothers (3). In our case the neonatal weight was appropriate for gestational age.
Many authors believe that a woman with Addison's disease should avoid breastfeeding because of hydro-electrolytic imbalance which occurs and it is stressful for mother, thus cabergolin (1 mg o.s.) was given to our patient to stop lactation.
The puerperium seems to be a period of increased risk of complications for the Addisonian patient. Literature shows many case report diagnosed during this period. This may illustrate that the symptoms presenting during pregnancy are neglected because of the similarity to a normal pregnancy (6, 7). Our patient had not complications and during the 2° day post-delivery she started oral hormonal replacement therapy.
The successful management of pregnant women with Addison's disease, regarding her state and that of the foetus, reassures those women that nowadays Addison's disease and pregnancy are not incompatible when proper monitoring and management is provided.

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