Grave's disease in 32-34 weeks of pregnancy

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Abstract. The objective of the present case report was to improve knowledge in the management of pregnancy and delivery with Graves' disease in 32-34 weeks of pregnancy. Primigravida with Graves' disease was detected at 28 weeks gestational age in patients Mrs. H, 26 years old came with complaints : shortness of breath, leg sweeling, a lump in the neck, the eyes stood out, finger tremors, can not stand the heat, often sweaty, the hearts was tachycardia, increased appetite but weight doesn't increase and even decreased 8 kg since last five years ago. Patients had a history of goitre since five years ago, with an irregular treatment. Pregnancy can be maintained after being treated in Departement of Obstetrics and Gynaecology and routinely controlled to assess fetal wellbeing. At 32-34 weeks of gestational age, the pregnancy was terminated by caesarean section, born baby boy, 1930 gr, Apgar Score 8/9. Mother was in good condition after caesarean section. Baby was dead in six days after birth with respiratory distress syndrome DD/ pneumonia aspiration. Hyperthyroidism which not handled will have a serious complications, but if properly handled and monitored, maybe the results of maternal and fetal outcomes expected good. Antepartum fetal assessment include fetal heart rate, the amount of amniotic fluid can be a parameter for pregnancy termination planning. The results of poor outcomes are things that must be observed that Graves' disease in pregnancy have a risk of neonatal mortality.

Keywords : Graves' disease, pregnancy, termination of pregnancy

Introduction

Pregnancy and thyroid function are the two things are related in both physiological and pathological conditions in which the hormonal and metabolic changes will occur in pregnancy, but sometimes overlooked because the symptoms are non specific and can be assumed as a hypermetabolic disorder of pregnancy. The interaction between pregnancy and thyroid gland is interesting because the occurrence of aberrant changes in thyroid function tests induced by pregnancy and between maternal and fetal thyroid function. In the general case of elevation of thyroid hormone response accompanied hiperfunction network caused by the thyroid condition is called hyperthyroidism. Pregnancy with hyperthyroidism is not uncommon to be doubt about the attitude in pregnancy is terminated or not needed. Mothers should be given an explanation about the problem to her and the fetus as its complications. Hyperthyroidism in pregnancy if not treated can cause a low birth, mortality, thyroid crisis at the time of parturition and neonatal thyrotoxicosis so that a multidisciplinary approach should be undertaken from obstetrician, perinatologist, endocrinologist and anesthesiologist (Mestman, 2004; Patil-Sisodia and Mestman, 2010).

Graves disease is an autoimmune disease that antibody that stimulates the thyroid receptor produces hypertrophy and growth of the thyroid is characterized by symptoms of hyperthyroidism, thyroid goitre, oftalmophaty and dermophaty. The prevalence of hyperthyroidism in pregnancy is approximately from 0.1 to 0.4% of pregnancies and 95% are caused by Graves' disease. Symptoms of Graves' disease can often precede before pregnancy, worsened in the first trimester and improved in the second and third trimester (Fitzpatrick and Russell, 2010; LeBeau and Mandel, 2006). Complications that can occur in the mother of a miscarriage, preeclampsia, heart failure, solusio placenta, thyroid crisis, and in infants is prematurity, small of gestational age, fetal growth is retarded, hypothyroidism, stillbirth (Mestman, 2004).

Materials and Methods

A case report of Mrs H, 26 years come on March 2nd, 2010 to Zainoel Abidin Hospital Emergency Room in Banda Aceh with complaints of shortness of breath, leg swelling, a lump in the neck, eyes protruding, finger tremor, can not stand the heat, sweating and heart often feels palpitations, increased appetite but no weight increase, weight loss occurs even in the last 5 years. The patient has a goitre since 5 years ago and was treated with Propiltiourasil but not regularly. Patients admitted 8 months pregnancy. First Day of Last Menstrual is August 10, 2010 ~ 28 - 30. General examination : Compos mentis, Blood Pressure 130/70 mmHg, Heart Rate 104 x / mnt, Temperatur 37.2 C, Respiration Rate 40

x / mnt. anemia (+), jaundice (-), dyspneu (+), cyanosis (-), height: 150 cm, weight 49 kg, body mass index 21.77%, edema pretibial (+), physiological reflexes (+), pathological reflexes (-), good turgor. Physical examination: anemia (+), eksoftalmus (+), Neck: 5 x 6 cm lump medial position, the consistency is soft, flat surface, no nodules, bruits (+), Lungs: basal ronchi pulmonary (+/+), Cardiovascular: heart rate 100 x / minute, Abomen: pregnancy, Extremities: leg edema (+). Hand tremors (+). Index Wayne 28. On obstetric examination uterine fundal height 25 cm, Contraction (-), fetal heart rate 178 x / minute, decreased fetal movement 2 days before come to hospital. Inspection: The vulva and urethra calm, Vaginal toucher: chewy, posterior lower portion, thick: 3 cm, there is no opening.

Laboratory results: Hb 8.7 g / dl, Ht 27.7%, leukocytes 13,200 / uL, platelet 163.000/uL, blood glucose 68 mg / dl, creatinine 0.7 mg / dl, Ureum 2,2 mg / dl. Diagnosis is G1 28-30 weeks pregnancy, living single intrauterine fetal, not inpartu. Management: Bed Rest, O2 2-4 l / min, 3 x 100 mg PTU, Dexamethasone 2 x 6 mg for 2 days, fluid balance, consul with the Endocrine Departement, high ambulatory care unit, terminating when the mother's general condition good.

Check for electocardiography, fT4 and TSH levels. On March 3, 2011 carried out by the rhythm ECG arrhythmia, the P wave is difficult to measure, ventricular rate 90x / i, normo axis, ST elevation (-), pathological Q (-), ekstrasistole (-), SV2 + RV6. Conclusion: Atrial Fibrillation Normo response, Left ventricle hypertrophy. On March 7, 2011 obtained the results of FT4: 0.95 g/dl, TSHS <0.002 µIU/ml. On march 10, 2011 performed ultrasound is obtained: Singleton live Intrauterine Fetal, biparietal diameter 72,8 mm, femur length 53 mm, abdominal circumference 228 mm, Estimated Fetal weight 1169 gr, placenta in right corpus. Patients were treated and found to be discharged on March 14, 2011 with clinical improvement and is recommended for the control to the Division of Endocrinology every 10 days and to the Department of Obstetrics and Gynaecology, Fetomaternal every weeks. On April 7, 2011 ultrasound examination in Obstetrics and Gynecology, Fetomaternal Policlinic with result: Singleton live intrauterine fetal, biparietal diameter 73.9 mm, abdomen circumference 278.2 mm, Sistolic Diastolic Artery Umbilical 3.5, Placental Calcification grade II,oligohydramnion. It was decided to consult immediately for terminated with the Endocrine Section of Anesthesia for Caesarean section considerations.

The results of consultation with the Endocrin Division to give therapy lugolisation 10 drops / 8 hours and give PTU 3 x 50 mg. Caesarean section performed without complication and born baby male 1930 g, Apgar score 8 / 9, body length 40 cm, according to Ballard Score 34 weeks

Results and Discussions

In early pregnancy there is increasing levels of thyroid binding globulin (TBG) as a protein carrier for thyroid hormones estrogen-induced hepatic TBG glycosylation with N-acetylgalactosamine, which prolong TBG clearance rate and triggers for the synthesis of thyroid hormones, increasing the amount of thyroxine (T4) and triiodothyronine (T3). Although levels of total T4 and total T3 increases, a new equilibrium will occur between hormone-bound and free FT4 and FT3 which will be normal. At 8-14 weeks of gestation there is a decrease in the levels of thyroid stimulating hormone (TSH).

In early pregnancy the mean glomerular filtration rate (GFR) increased iodine clearance will rise to the increasing iodine that comes out through the kidneys. This will result in a decrease in plasma levels of iodine. As compensation for the thyroid gland by TSH stimulation will increase significantly. Human Chorionic Gonadotropin (hCG) is composed of subunits α and β, β subunit of hCG has the same structural β subunit of TSH, studies say that hCG has thyroid strimulasi activation. In normal pregnancy does not occur, which means the effect of hCG on thyroid function. at 8 to the 10 weeks of pregnancies there was an increase of hCG and gradually decreased until the 20th week of pregnancy is believed to be in high concentrations can activate the TSH receptor thereby increasing hormone levels of FT3 and FT4 (Pearce and Braverman, 2004; Neale et al., 2007).

Important clinical situation being assessed is whether pregnant women who before had been diagnosed Graves' disease and had received antithyroid drugs before, women

who have been cured in the previous treatment and women who are not diagnosed until the occurrence of pregnancy. The diagnosis of Graves' disease is established in these patients because of the discovery of symptoms and clinical signs such as lumps in the neck, eyes protruding, finger tremor, can not stand the heat, sweating and heart often feels palpitations, increased appetite, but weight has not increased, weight loss occurs even in the last 5 years and cardiovascular complaints such as breathlessness and basal pulse> 90x / min. The patient has a goitre since 5 years ago and was treated with Propiltiourasil but not regularly. Diagnosis is suspected augmented by specific symptoms such as Wayne oftalmopati or index> 20. Definite diagnosis can be added by the reduced levels of TSHs <0.1 ng / l and FT4> 1.8 ng/dl (Mestman, 2004; Fitzpatrick & Russell, 2010; Hartini, 2011).

In these patients given Propiltiourasil to inhibit the process organification and autoimmune reaction, inhibits the synthesis of thyroglobulin as it also has the additional effect of inhibiting conversion of T4 to T3 in the periphery. PTU has a half-life of 6-12 hours. PTU is safe for pregnancy, but there are reports that can cause hypothyroidism in fetus .PTU given with starting dose of 100 mg-150 mg every 8 hours maximum of 300-450 mg and the dose is slowly reduced if the mother become euthyroid. Ultrasound examination to examine the amniotic fluid has become an integral component of risk has decreased uteroplacental perfusion. In these patients performed Caesarean section on the consideration of termination of oligohydramnios due to amniotic fluid index of 5 or less can improve fetal distress and low Apgar score in 5 minutes (Hartini, 2011; Pillar, 2010; Cunningham and Williams, 2001). Doppler ultrasonography is a noninvasive technique to assess blood flow by knowing the flow impedance downstream. The ratio of systolic / diastolic (S / D) umbilical artery is the most used index is considered abnormal if it rises above the 95^{th} percentile according to gestational age, or if there is no diastolic flow or reverse direction. Increased impedance in umbilical artery blood flow occurs due to lack of placental villus vascularization and can be found stunted fetal growth or fetal disorders. At 30 weeks of gestation is generally less than 3, in these patients obtained SDAU 3.5 so that an increase in this ratio has been reported to be related to a state of fetal distress, but this ratio is usually not used alone to determine the management of pregnancy. Hartini, 2011; Cunningham and Williams, 2001). In these patients given lugolisasi and provide PTU to the mother prior to caesarean section to avoid the occurrence of thyroid crisis at the time of surgery that can be assessed by the increasing signs of existing hyperthyroidism, decreased consciousness, the hyperpirexia. Diagnostic criteria for thyroid crisis as one of the complications of maternal namely by assessing the dysfunction index Burch heat setting, the effects on the CNS, gastrointestinal, hepatic dysfunction, cardiovascular dysfunction, heart failure, atrial fibrillation and a history of the originator. Interpretation: very likely> 60, maybe 45-60, 25-44 impending, may not be <8.25

Conclusions

Untreated hyperthyroidism will have serious complications for mother and fetus but if handled well then the outcome of both mother and fetus are expected. Assessment and monitoring of the development which includes velisometri antepartum umbilical artery Doppler, amniotic fluid v olume may be a parameter for termination of pregnancy planning. Poor outcome in infants in these patients because of a neonatal death should be re-examined for the management of pregnancies with Graves' disease in both the management of pregnancy and childbirth, and with endocrine and perinatologi division. Preconception counseling and multi-disciplinary approach is essential for these patients to prepare for the upcoming pregnancy.

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Appendix 1.


HAJRI MAHYUNI/26 TH,
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RAB4-8-D/OB
FETOMATERNAL RSUDZA
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