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Guidelines for obstetrical practice in Japan: Japan Society of Obstetrics and Gynecology (JSOG) and Japan Association of Obstetricians and Gynecologists (JAOG) 2011 edition

Short title: Guidelines for obstetrical practice in Japan 2011

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Abstract

Clinical guidelines for obstetrical practice were first published by the Japan Society of Obstetrics and Gynecology (JSOG) and the Japan Association of Obstetricians and Gynecologists (JAOG) in 2008, and a revised version was published in 2011. The aims of this publication include the determination of current standard care practices for pregnant women in Japan, the widespread use of standard care practices, the enhancement of safety in obstetrical practice, the reduction in burdens associated with medico-legal and medico-economical problems, and a better understanding between pregnant women and maternity-service providers. These guidelines include a total of 87 Clinical Questions followed by several Answers (CQ&A), a Discussion, a List of References, and some Tables and Figures covering common problems and questions encountered in obstetrical practice. Each answer with a recommendation level of A, B or C has been prepared based principally on "evidence" or a consensus among Japanese obstetricians in situations where "evidence" is weak or lacking. Answers with a recommendation level of A or B represent current standard care practices in Japan. All 87 CQ&As are presented herein to promote a better understanding of the current standard care practices for pregnant women in Japan.

(**Key words**: clinical questions, complicated pregnancy, guidelines, obstetrical practice, recommendations, standard care practices)

Introduction

In Japan, approximately 1,100,000 women give birth annually at 2,800 facilities, at which approximately 8,000 obstetricians are employed. Because guidelines for obstetrical practice were not previously available in Japan, remarkable diversity exists among these facilities, particularly with regard to the screening and treatment of fetal/pregnancy abnormalities. This diversity in practice may partly explain the increased number of malpractice lawsuits. The Japan Society of Obstetrics and Gynecology (JSOG) and the Japan Association of Obstetricians and Gynecologists (JAOG) decided to publish guidelines describing standard care practices for pregnant women in 2005. The aims of this guideline are to encourage the widespread use of standard care practices, to enhance the safety of obstetrical practice, to reduce burdens associated with medico-legal and medico-economical problems, and to promote a better understanding between pregnant women and maternity-service providers.

The authors of this article have contributed greatly to the preparation of this draft. The draft was frequently revised as a result of frequent audits and opinions gathered after the publication of the draft in the official Journal of JSOG and on the JSOG and JAOG web sites. Then, the first edition, "Guidelines for Obstetrical Practice in Japan 2008," consisting of 63 Clinical Questions and 254 Answers (CQ&A), was published in April 2008. The second edition, "Guidelines for Obstetrical Practice in Japan 2011", containing the revised 63 CQ&A as well as 24 new CQ&A, was published in April 2011.

As these guidelines were originally written in Japanese, non-Japanese speakers have been somewhat inconvenienced; this English version may overcome this problem. The original version of "Guidelines for Obstetrical Practice in Japan 2011" contains a Discussion, a List of References, and some Tables and Figures. However, these sections have been omitted because of space limitations.

Implications of "A", "B", and "C" recommendation levels

Several tests and/or treatments for pregnant women are presented as

answers with a recommendation level of A, B or C to each clinical question. The answers and recommendation levels are principally based on evidence or a consensus among Japanese obstetricians when the evidence is considered to be weak or lacking. Thus, the answers are not necessarily based on "evidence". The answers usually begin with a verb, which may promote changes in behavior among maternity-service providers in clinical practice. Answers with a recommendation level of A or B are regarded as current standard care practices in Japan. Level A indicates a stronger recommendation than level B. Consequently, informed consent is required when maternity-service providers do not provide care corresponding to an answer with a level of A or B. Answers with a recommendation level of C are possible options that may favorably affect the outcome but for which some uncertainty remains regarding whether the possible benefits outweigh the possible risks. Thus, care corresponding to answers with a recommendation level of C does not necessarily need to be provided. Some answers with a recommendation level of A or B include examinations and treatments that may be difficult for general maternity-service providers to perform. In such cases, the maternity-service providers must refer the patient to an appropriate institution.

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Chapter A. General practice

CQ001: How should uncomplicated healthy pregnant women be cared for prenatally?

Answer

1. Provide antenatal care regularly and try to detect early premature labor, gestational diabetes, pregnancy-induced hypertension, low-lying placenta and placenta previa, fetal abnormalities (fetal growth restriction, abnormal position, oligohydramnios, and polyhydramnios), and placental insufficiency. (A)
2. Measure maternal weight, fundal height of the uterus, and blood pressure; semiquantify glucose and protein concentrations in the urine; and assess fetal heart beat and maternal edema at each antenatal visit. (B)
3. Provide antenatal care according to the following schedule: three times until the end of 11 weeks of gestation (GW); every four weeks between 12 GW and the end of 23 GW; every two weeks between 24 GW and the end of 35 GW; and once a week thereafter. (C)
4. Regularly assess the fetal wellbeing at ≥ 41 GW. (B)
5. Consider the possibility that midwife-managed care for healthy women, together with existing services (see CQ414), may be clinically effective and may enhance the pregnant woman's satisfaction. (C)

CQ002: What information should be obtained from women during an early stage of pregnancy?

Answer

1. Ask women to complete the questionnaire form (see sample in Discussion). (B)
2. Measure body weight and blood pressure and semiquantify glucose and protein concentrations in the urine. (B)
3. Screen for cancer of the uterine cervix using a cytological examination. (C)

CQ003: What blood tests should be performed during the first trimester?

Answer

1. The following blood tests are recommended: blood typing including ABO and Rh (A), atypical antibody against erythrocyte (indirect Coombs test) (A), complete blood count (A), HBs antigen (A), HCV antibody (A), rubella antibody using HI (A), screening tests for syphilis (A), HTLV-1 antibody (A, before the end of the second trimester), screening test for HIV (B), glucose concentration (B), and toxoplasma antibody (C).

CQ004: How should pregnant women with an increased risk of deep vein thrombosis (DVT) and pulmonary thromboembolism (PTE) be screened and managed?

Answer

1. Recommend the use of elastic stockings for women with risk factors such as dehydration during emesis, long-term bed rest, obesity, and an older age. (C)
2. Consider the use of unfractionated heparin for women with the highest risk according to the 2004 guidelines for the prophylaxis of DVT/PTE (see Table 1). (C)
3. Do not administer warfarin to pregnant women because of its teratogenicity. As an exception to the rule, warfarin may be considered in pregnant women who have undergone a heart valve replacement. (A)
4. Assess PT, APTT, platelet count, and liver function at appropriate intervals during anti-coagulation with heparin. Measure the platelet count 5 to 7 days after the initiation of heparin for the early detection of heparin-induced thrombocytopenia (HIT). (B)
5. Try to prevent perinatal DVT/PTE according to the 2004 guidelines for the prophylaxis of DVT/PTE. (B)
6. Rule out DVT prenatally based on symptoms and palpation of both the legs before the postnatal prophylactic use of the intermittent pulse-pressure method. (C)
7. Avoid placing the patient in a “lithotomy” position when performing a cesarean section. (C)

8. Initiate heparin calcium at a dose of 5,000 units twice daily (s.c.) after confirming hemostasis and continue for 3 to 5 days for the prophylaxis of DVT/PTE when anti-coagulation is indicated after a cesarean section. (B)

CQ005: How should patients with hyperglycemic disorders during pregnancy be screened?

Answer

1. Screen all pregnant women for "gestational diabetes mellitus (GDM)" and "overt diabetes in pregnancy". (B)
2. Screen using the following stepwise method: (B)

   1) Measure random blood glucose level at an early stage of pregnancy (each hospital should determine its own cutoff value). Check items ①～③ in Answer 4 before planning a 75-g oral glucose tolerance test (OGTT) in women with a random blood glucose level of ≥ 200 mg/dL.

   2) Give the pregnant woman a 50-g glucose challenge test (GCT; cutoff value ≥ 140 mg/dL) or measure the random blood glucose level a second time (cutoff value ≥ 100 mg/dL) between 24 to 28 GW in women not diagnosed as having "GDM" or "overt diabetes in pregnancy".
3. Give a 75-g OGTT to all women with a positive screening test result except women diagnosed as having "overt diabetes in pregnancy". Diagnose the pregnant woman as having "GDM" if one or more threshold values of a 75-g OGTT are fulfilled. Check items ①～③ in Answer 4 in women with a 2-h PG ≥ 200 mg/dL. (A)

   Threshold values for 75-g OGTT

   ① FPG (fasting plasma glucose) ≥ 92 mg/dL (5.1 mmol/L)

   ② 1-h PG ≥ 180 mg/dL (10.0 mmol/L)

   ③ 2-h PG ≥ 153mg/dL (8.5 mmol/L)
4. Diagnose the pregnant woman as having "overt diabetes in pregnancy" if any of the following three criteria are fulfilled. (A)

   ① FPG ≥ 126 mg/dL

   ② HbA1c ≥ 6.5%, expressed as National Glycohemoglobin Standardization Program (NGSP) value (HbA1c ≥ 6.1% according to Japan Diabetes Society [JDS])*

③ Definite diabetic retinopathy

④ Random blood glucose ≥ 200 mg/dL with any of ①～③, or 2-h PG ≥ 200 mg/dL with any of ①～③

*The HbA1c value (%) according to the NGSP criteria corresponds to the same value plus 0.4 according to the JDS criteria.

5. Give a 75-g OGTT to all women with "GDM" at 6 to 12 weeks postpartum. Assess the degree of glucose intolerance once again in all postpartum women diagnosed as having "overt diabetes in pregnancy". (C)

CQ006: How should patients with thyroid dysfunction during pregnancy be screened?

Answer

1. Determine the TSH, free T3, and free T4 levels in the blood of women with suspicious clinical signs and/or a medical history of thyroid dysfunction. (B)
2. Try to normalize the thyroid function of patients with thyroid dysfunction. Consult appropriate specialists or other appropriate experts if any difficulty is encountered while treating the patient. (A)

CQ007: How should women visiting a clinic and complaining of decreased fetal movements be dealt with?

Answer

1. Tell the patient, "Some investigators have suggested that decreased fetal movements are associated with fetal jeopardy." (C)
2. Assess the fetal wellbeing in an appropriate manner, such as an NST. (B)

CQ008: How should women with an atypical antibody against red blood cells be treated? (see CQ302 for women with ant-Rh [D] antibody)

Answer

1. Identify the antibody when a screening test, such as the indirect Coombs test, suggests the presence of an atypical antibody against red blood cells. (B)

2. Assess the titer of the antibody if the antibody belongs to an IgG that may cause hemolysis in the fetus (see Table 1). (B)
3. Monitor the fetal wellbeing, paying special attention to anemia and hydrops, in women with an elevated titer of an IgG antibody that may cause hemolysis in the fetus. (B)
4. Be prepared to administer un-crossmatched packed red blood cells compatible with an ABO blood type if the pregnant woman develops unexpected massive bleeding. (B)

CQ009: How should the expected date of confinement (EDC) be determined?

Answer

1. Determine the EDC based on the last menstrual period (LMP) in principle, but use the date of ovulation or fertilization if available. (A)
2. Use the EDC based on the CRL (crown-rump length) in cases with a CRL of 14 – 41 mm if the difference in the EDC is ≥ 7 days from the EDC based on the LMP. (B)
3. Use the EDC based on the BPD (biparietal diameter) and the FL (femur length) in cases with an estimated gestational weeks of 12 to 19 and/or a CRL of > 50 mm if the difference in the EDC is ≥ 10 days from the EDC based on the LMP. (C)
4. Estimate the EDC according to Answer 3, with careful consideration of fetal growth restriction (FGR) and post-term pregnancy, after taking possible deviations into account in cases with an estimated gestational weeks of ≥ 20. (C)
5. Determine the EDC based on findings of the early neonate if no relevant information is available prenatally. (C)

CQ010: What guidance regarding maternal body composition and weight gain during pregnancy should be provided?

Answer

1. Provide the following information when asked about the association between maternal body composition and pregnancy outcome. (C)
   1) Lean women (BMI < 18.5 before pregnancy) are at an increased risk for

preterm labor, preterm delivery, and low birthweight newborns.

2) Obese women (BMI ≥ 25 before pregnancy) are at an increased risk for pregnancy-induced hypertension, gestational diabetes mellitus, stillbirth, fetal macrosomia, and fetal neural tube defects.

2. Provide the following information when asked about weight gain during pregnancy. (B)

   1) Japanese women of normal body composition (18.5 ≤ BMI < 25) is estimated to require a weight gain of 11 kg as of the 40th week of gestation to have a singleton newborn weighing 3 kg, according to the "Dietary Reference Intakes for Japanese" published by the Ministry of Health, Labour, and Welfare, Japan (2010). However, considerable individual differences exist.

   2) Maternal weight gain during pregnancy is correlated with the birthweight of the newborn. However, this correlation becomes weaker as the pre-pregnancy maternal BMI increases. In cases of obese women, the pre-pregnancy BMI, rather than the weight gain during pregnancy, tends to affect the birthweight of the newborns more strongly.

3. Consider the following items when providing nutritional advice.

   1) Recommend a balanced intake of nutrients. (A)

   2) Use the pre-pregnancy BMI. (B)

   3) Note that maternal weight gain is one of the parameters for assessing the maternal nutritional condition, and several different guidelines for maternal weight gain during pregnancy exist in Japan. (B)

   4) Moderate nutritional guidance for pregnant women is preferred because high-quality evidence is not available. (C)

Chapter B. Consultation

CQ101: Which vaccines are safe for pregnant and lactating women?

Answer

1. Viable vaccines are contraindicated, in principle, for pregnant women. (A)
2. Non-viable vaccines can be given to pregnant women. (B)
3. Both viable and non-viable vaccines can be given to lactating women. (B)

CQ102: What considerations are necessary regarding the administration of vaccines against influenza and antiviral drugs to pregnant women?

Answer

1. Administer vaccines after explaining that the benefit of vaccination outweighs the risk derived from infection with influenza when women want to be vaccinated. (B)
2. Consider that the benefit outweighs the risk of using antiviral drugs such as oseltamivir and zanamivir for the treatment of influenza in pregnant and lactating women. (C)
3. Consider that the benefit outweighs the risk of using antiviral drugs such as oseltamivir and zanamivir for the prophylaxis of influenza in pregnant and lactating women after they have come in close contact with an infected person. (C)

CQ103: How should women anxious of the adverse effects of radiation exposure during pregnancy be treated?

Answer

1. Before counseling, determine the dose of the exposure using Table 1 and the stage of pregnancy (weeks of gestation) when the exposure occurred using the last menstrual period, measurement of the conceptus by ultrasonography, or the date of a positive pregnancy test result. (A)
2. Explain that the risk of a fetal anomaly does not increase in cases with exposure within 10 days after conception. (B)
3. Explain that an embryo at stages ranging from 11 days after conception until 10 weeks of gestation is vulnerable but does not have an increased risk of malformation at doses of < 50 mGy. (B)
4. Explain that the central nervous system of a fetus at 10 to 27 weeks of gestation may be affected unfavorably at doses of ≥100 mGy.
5. Explain that a dose of 10 mGy is associated with a subtle, but negligible, increase in the risk of childhood cancer. (B)

CQ104: How should women who ask questions regarding the effects of a drug on the fetus be answered?

Answer

1. First determine the date on which the drug was taken and the corresponding gestational week. Use the last menstrual period, the date of a positive pregnancy test (urinary hCG level), and an ultrasound measurement to estimate the gestational week accurately. (A)
2. Refer to Table 1, a textbook such as "Drugs in Pregnancy and Lactation," by Briggs et al. (Lippincott Williams and Wilkins) or information on the Internet. Inform the woman of the service provided by the Japan National Center for Child Health and Development. (B)

CQ105: How should one respond when asked about the association between folic acid and the occurrence of neural tube defects (NTD) in the fetus?

Answer

1. Explain as follows. (B)

   1) A reduction in the risk of an NTD is expected if 0.4 mg of folic acid is taken as a daily supplement prior to the establishment of pregnancy.

   2) A reduction in the recurrent risk of an NTD is expected when a woman who has previously given birth to an infant with an NTD takes 4.0 – 5.0 mg of folic acid daily under the supervision of a physician.

CQ106: How should women in whom a thickened nuchal translucency (NT) is incidentally found be treated?

Answer

1. Remember that the accurate measurement of an NT requires following:
   1) A stage of pregnancy between 10 and 14 weeks of gestation. (C)
   2) Sufficient magnification of the upper trunk of the fetus. (C)
   3) Measurement on a sagittal section as shown in the figure. (C)
2. Explain the implications of a thickened NT to women who have agreed to be informed of the results of antenatal diagnosis using ultrasonographic testing.(B)
3. Remember that some women do not wish to know the results of antenatal diagnosis. (A)
4. Consider the ethical problems involved in both situations described in

Answers 2 and 3. (A)

5. Explain that the implications of a thickened NT are as follows:(C)
   1) A fetus with an NT of ≥ 3 mm, 4 mm, 5 mm, or 6 mm has a 3-times, 18-times, 28-times, or 36-times higher risk than the risk based on maternal age, respectively, of having 21-trisomy, 18-trisomy, or 13-trisomy, as shown in Table 2.
   2) More than 90% of fetuses with a normal karyotype but with an NT of ≥ 3.5 mm survive without developing any congenital diseases.
   3) Approximately 70% of fetuses with a chromosomal aberration have an NT that is ≥ 95th percentile value and that increases from 2.1 mm to 2.7 mm with advancing gestation during the 11th to 14th weeks of gestation. The 99th percentile value for NT is 3.5 mm, independently of the gestational week.
   4) Chromosomal analysis using amniotic fluid is needed for a definite diagnosis of chromosomal aberration.

CQ107: How should one respond when asked about the effects of a drug during lactation on neonates/infants?

Answer

1. Assure the patient that most drugs, with a few exceptions, are not harmful to neonates/infants when taken while a woman is lactating. (B)
2. Recommend that the condition of the child, such as the speed of suckling, sleep status, mood and activity, and weight gain, be observed when a lactating woman decides to take a drug for which some concern over possible unfavorable effects exists. (C)
3. Refer to a textbook such as “Drugs in Pregnancy and Lactation,” by Briggs et al. (Lippincott Williams and Wilkins) or visit the web site of the Japan National Center for Child Health and Development. (C)

CQ108: How should one respond to questions regarding exercise during pregnancy?

Answer

1. Exercises to develop adequate strength may contribute to the maintenance and promotion of a healthy lifestyle. (B)
2. No evidence exists supporting any favorable effects of exercise on the prevention of pregnancy-induced hypertension, gestational diabetes mellitus, or prolonged labor. (C)
3. Women with the following complications should refrain from regular exercise:
   1) Serious diseases of the heart and lung.
   2) Threatened preterm labor, cervical incompetency, shortened uterine cervix, or premature rupture of the membranes.
   3) Genital bleeding, placenta previa, or a low-lying placenta.
   4) Pregnancy-induced hypertension.
4. Women should refrain from the following exercises. (B)
   1) Exercises requiring a supine or standing position with minimal movement for long periods of time.
   2) Activities with an inherent increased risk of falling or traumatic injuries.
   3) Scuba diving.
5. Women with the following symptoms should discontinue all exercise: dizziness, headache, chest pain, dyspnea, muscle weakness, calf pain or a swollen calf, uterine contractions or discomfort in the abdomen, decreased number of fetal movements, and bleeding or an increased watery discharge from the vagina. (B)
6. An appropriate heart rate target zone should be maintained while performing aerobic exercise. (B)

CQ109: How should pregnant women who smoke or who are exposed to passive smoking be treated?

Answer

1. Ask women about their smoking status at an early stage in their pregnancy. (B)
2. Recommend that women quit smoking. (B)

3. Respond as follows when asked about the effects of active and passive smoking: (B)
   " Active and passive smoking have unfavorable effects on human health, pregnancy outcomes, and fetal and child development and health."
4. Recommend that the woman's partner quit smoking. (C)
5. Recommend that women avoid passive smoke. (C)

Chapter C. Obstetrical complications during the first trimester of pregnancy

CQ201: How should women with hyperemesis gravidarum be treated?

Answer

1. Recommend "frequent small meals" and the frequent intake of salt-containing fluids, such as sports drinks. (A)
2. Administer i.v. fluids in patients with dehydration. (A)
3. Add thiamine hydrochloride (vitamin B1) to the fluid to prevent Wernicke's encephalopathy. (A)
4. Consider the administration of oral pyridoxine (vitamin B6). (C)
5. Be cautious of the possible occurrence of deep vein thrombosis. (C)

CQ202: How should women with a presumed abortion at < 12 weeks of gestation be treated?

Answer

1. Consider the possibility of an ectopic pregnancy. (A)
2. Diagnose as a "missed abortion" after at least two examinations performed at an appropriate time interval. (B)
3. Treat patients with abortions as follows.
   1) For patients with missed, incomplete, or progressive abortions, active treatment with surgical evacuation is recommended, although conservative treatment without surgical procedures may be feasible. Provide information regarding the risks of unscheduled procedures to any remaining conceptus in utero even after surgical evacuation, and be cautious of possible molar or ectopic pregnancies. (B)
   2) For patients with complete abortions, only follow-up without surgical

intervention is sufficient. (C)

CQ203: How should patients with ectopic pregnancy be treated?

Answer

1. An ectopic pregnancy should be suspected in women with a positive pregnancy test result (urinary or serum hCG) who exhibit any of the following signs. (B)
   1) No gestational sac (GS) within the uterus.
   2) A GS-like mass outside the uterus.
   3) A considerable amount of fluid in the Douglas pouch.
   4) Signs indicative of a reduction in the circulating blood volume (anemia, tachycardia, or hypotension).
   5) No chorionic villi in the evacuated conceptus.
   6) Complaints suggestive of an acute abdomen.
2. Choose surgical, medical, or expectant management after a careful assessment of the general condition of the patient, the site of the ectopic pregnancy, the hCG value, the presence or absence of fetal cardiac activity, and the volume of the abnormal mass in the pelvic cavity. (B)
3. Closely monitor patients who are being treated medically or expectantly with caution for intra-abdominal bleeding, persisting ectopic pregnancy, and chorionic diseases. (B)
4. Confirm a non-pregnant level of hCG during a follow-up examination of patients treated medically or expectantly. (C)
5. Remember that the incidence rate of heterotopic pregnancy is higher among women using assisted reproductive technology than among women with natural conception. (C)

CQ204: How should women with recurrent pregnancy loss be treated?

Answer

1. Diagnose patients with ≥ 3 successive spontaneous abortions as having "habitual abortion". (A)
2. Try to reduce the anxiety of couples through supportive counseling. (B)
3. Provide the following information: (C)

"Sixty to seventy percent of couples with unexplained habitual abortions will go on to have successful pregnancies without any specific treatment, although the success rate of the next pregnancy varies according to maternal age and the number of previous abortions. Investigations of the causes of habitual abortions are able to disclose a specific cause in only 50% of couples with habitual abortions."

4. Recommend the following examinations if the couples want to seek the cause of the habitual abortions.

   1) Anti-phospholipid antibodies, including lupus anticoagulant, anti-cardiolipin antibody, and anti-cardiolipin β2GP1 antibody. (A)

   2) Quantity of coagulation factors. (C)

   3) Chromosomal analysis of the patient and the partner after obtaining informed consent. (B)

   4) Transvaginal ultrasonography, hysterosalpingography, and/or hysteroscopy for the detection of anatomical deformities of the genital tract. (A)

   5) Endocrinological environment. (C)

5. Diagnose patients with habitual abortion as having "antiphospholipid antibody syndrome" if they test positive for an anti-phospholipid antibody ≥ 2 times. (A)
6. Remember that "paternal lymphocyte immunization" is only effective in women with certain characteristics. Conduct lymphocyte immunotherapy using irradiated lymphocytes only after a serious consideration of the indications (see corresponding paragraph in the Discussion). (A)

CQ205: What cautions are required for induced abortion (dilatation and curettage) at < 12 weeks of gestation?

Answer

1. Before the procedure, confirm the last menstrual period, parity, and the presence or absence of asthma, drug allergies, and current use of drugs. (A)
2. Before the procedure, confirm the anatomical features inside and outside of the uterus using digital and ultrasonographic examinations. (A)

3. Perform the following pre-operative examinations: blood typing including ABO and Rh (D) (B), a complete blood count (B), electrocardiography before or during the procedure (C), and tests for the detection of infections such as a HBV. (C).
4. Obtain informed consent as to possible complications arising from the anesthesia or procedure. (C)
5. Confirm that oxygen is easily available. (A)
6. Confirm the presence or absence of chorionic villi in the evacuated conceptus. (A)
7. Confirm the completeness of the procedure using trans-vaginal ultrasonography just after the procedure. (C)
8. Perform a second trans-vaginal ultrasonography examination one week after the procedure. (C)

CQ206: How should women with genital bleeding with or without abdominal pains (threatened abortion) at < 12 weeks of gestation be treated?

Answer

1. For patients with undetectable fetal cardiac activity during an ultrasonography examination, consider the possibility of early-stage pregnancy, missed abortion, ectopic pregnancy, trophoblastic disease, and incomplete or complete abortions as differential diagnoses. (B)
2. Remember that no drugs have been proven to be effective for improving pregnancy outcomes. (B)
3. In patients with detectable subchorionic hematoma and fetal cardiac activity, consider bed rest as a possible treatment. (C)

Chapter D. Obstetrical complications during the second and third trimesters of pregnancy

CQ301: How should women with suspected cervical incompetence be treated?

Answer

1. Treat women suspected of having cervical incompetency based on their history of previous pregnancies using either of the following modalities:

(B)

1) Follow-up the current pregnancy conservatively with special attention to the length and dilatation of the uterine cervix.

2) Use prophylactic cervical cerclage.

2. Treat women suspected of having cervical incompetency based on the course of the current pregnancy using either of the following modalities: (A)

   1) Monitor patients closely using cautions similar to those for patients with threatened abortion/preterm labor.

   2) Use therapeutic cervical cerclage.

3. Use prophylactic cervical cerclage soon after ≥ 12 weeks of gestation. (B)
4. Control any infection first if the patient shows clinical signs of an infection such as fever, leukocytosis, and/or an elevated serum C-reactive protein level. (C)

CQ302: How should pregnant women with a blood type of negative Rh (D) be treated?

Answer

1. Treat women without anti-Rh (D) antibody as follows:

   1) Administer anti-D immunoglobulin within 72 hours after the delivery of an Rh (D)-positive infant. (A)

   2) Assess the anti-Rh (D) antibody titer at least twice around 28 weeks and peripartum. (B)

   3) Administer anti-D immunoglobulin to women around 28 weeks for the prevention of Rh(D) alloimmunization, after obtaining informed consent. (B)

   4) Administer anti-D immunoglobulin to women with the following characteristics to prevent Rh(D) alloimmunization. (B)

   ・Termination of pregnancy with a viable embryo at ≥ 7 weeks, including miscarriage, induced abortion, and ectopic pregnancy.

   ・After invasive procedures such as amniocentesis and external cephalic version of breech.

・A traumatic hit to the abdomen.

2. In women with anti-Rh (D) antibody, measure the anti-Rh (D) antibody titer every two weeks during the latter half of pregnancy. (B)
3. In patients who show a significant increase in the anti-Rh (D) antibody titer, assess fetal wellbeing with respect to anemia and hydrops fetalis. (A)

CQ303: How should women with preterm labor be treated?

Answer

1. Remember that women with the following characteristics have a high risk for preterm delivery. (A)

   Current pregnancy: multiple pregnancy, bacterial vaginosis, and/or shortened uterine cervix.

   Past history: previous preterm delivery and/or post-conization of the uterine cervix.
2. Diagnose as preterm labor in cases with regular uterine contractions and/or premature maturation of the uterine cervix (dilatation of the cervix and/or shortened cervical length) and recommend that these patients be admitted to the hospital and/or given a tocolytic drug. (B)
3. Suspect a placental abruption in patients with an abnormal fetal heart rate pattern. (B)
4. Measure the maternal body temperature, white blood cell count, and C-reactive protein (CRP) level and initiate antibiotic therapy if an intrauterine infection is suspected. (C)
5. Consider an early delivery in patients suspected of having an amniotic fluid infection. (C)
6. Cooperate with hospitals having neonatal intensive care unit (NICU) beds, if necessary. (B)
7. Administer betamethasone (12 mg twice, i.m., at an interval of 12 hours) to women if delivery at 22 – 33 weeks is considered to be inevitable. (B)

CQ304: How should women with premature rupture of membranes (PROM) be treated?

Answer

1. Refrain from frequent digital examinations and examine the vagina and uterine cervix using Cusco's speculum to minimize the risk of ascending infection. (B)
2. Assess the body temperature, pulse rate, tenderness of the abdomen, complete blood count (CBC), C-reactive protein (CRP) level, and non-stress test (NST) findings (at ≥ 26 weeks) at an adequate interval to detect "clinical chorioamnionitis" and to confirm fetal wellbeing. (C)
3. Consider an early delivery within 24 hours in a patient diagnosed as having "clinical chorioamnionitis" at ≥ 26 weeks of gestation. (C)
4. Monitor the fetal heart rate (FHR) patterns continuously in parturient febrile (≥ 38.0°C) women at ≥ 26 weeks of gestation and pay attention to maternal septicemia. (B)
5. Induce labor or expect the onset of spontaneous labor in cases with a gestational week of ≥ 37. (B)
6. Treat women with a gestational week of 34 – 36 in a similar way to women with a gestational week of ≥ 37. (C)
7. Treat women with a gestational week of < 34 as follows:

   1) Refer the patient to a facility with neonatal intensive care unit (NICU) beds or cooperate with a facility with NICU beds in treating the patient. (B)

   2) Treat expectantly with the administration of antibiotics, in principle. However, an early delivery is also an acceptable option in some situations. (C)
8. Administer steroids to a mother with a gestational week of < 32 to facilitate fetal lung maturation and to prevent fetal intracranial hemorrhage (see CQ303). (B)
9. Treat women with a gestational week of < 26 according to the policy of each hospital. (B)

CQ305: How should women with placenta previa be treated?

Answer

1. Screen all women around 20 weeks with ultrasonography for the

detection of women with an increased risk of placenta previa and diagnose as placenta previa before 32 weeks of gestation using trans-vaginal ultrasonography. (B)

2. Refer the patient to an appropriate facility before 33 weeks if contingency plans are considered to be insufficient. (C)
3. Prepare treatments, including the possibility of a midnight emergency cesarean section, around 34 weeks once a decision has been made to continue treating the patient at your facility. (C)
4. Be cautious of placenta accreta, especially in women with a previous cesarean section and in women with a placental site close to the previous uterine scar. (B)
5. Carefully assess the possibility of placenta accreta in women with a placental site that covers the previous uterine scar. (B)
6. Perform an elective cesarean section before 38 weeks of gestation. (B)
7. Prepare for the possible need for a blood transfusion before elective cesarean section or during an emergency cesarean section. (A)
8. Inform women and their families of the risks of blood transfusion and an emergency hysterectomy in advance. (A)

CQ306: How should women with a low-lying placenta be treated?

Answer

1. Consider an elective cesarean section in women with a placental edge within 2.0 cm from the internal orifice of the uterus at 36 – 37 weeks. (C)
2. Be cautious of placenta accreta in women with repeat cesarean sections and a placental site on the anterior uterine wall. (B)
3. Be cautious of postpartum hemorrhage. (A)

CQ307: How should women with polyhydramnios be treated?

Answer

1. Suspect polyhydramnios in women with an extraordinarily large uterus. (C)
2. Diagnose as polyhydramnios based on the amniotic fluid index (AFI) and/or the single deepest pocket measured using ultrasonography. (B)

3. Investigate the cause after the diagnosis of polyhydramnios. (A)
4. Consider amnioreduction in patients with symptoms derived from a large uterus or signs of premature labor. (C)

CQ308: How should women with oligohydramnios be treated?

Answer

1. Suspect oligohydramnios in women with an extraordinarily small uterus. (C)
2. Diagnose as oligohydramnios based on the amniotic fluid index (AFI) and/or the single deepest pocket measured using ultrasonography. (B)
3. Investigate the cause after the diagnosis of oligohydramnios at mid-gestation. (A)
4. Be cautious of the fetal wellbeing. (B)

CQ309: How should one screen for patients with fetal growth restriction (FGR)?

Answer

1. Measure the fundal height of the uterus at each antenatal visit to detect patients with FGR. (C)
2. Estimate the fetal size in all women around 30 weeks using ultrasonography and repeat examinations if necessary. (B)
3. Be cautious of the FGR especially in women with risk factors for FGR such as hypertension, hyperglycemia, kidney diseases, inflammatory intestinal diseases, anti-phospholipid antibody syndrome, autoimmune diseases, cardiac diseases, smoking, alcohol/caffeine abuse, previous FGR, a lean body, and inadequate weight gain during the current pregnancy. Try to remove risk factors and to treat them appropriately. (C)
4. Diagnose as FGR when the estimated fetal weight (EFW) is below the -1.5 SD value of the mean EFW but not the mean birthweight according to the gestational week. Refer to the abdominal circumference of the fetus and serial changes in the EFW when diagnosing FGR. (C)

CQ310: How should women with fetal growth restriction (FGR) be managed?

Answer

1. Investigate the cause of FGR, focusing on the following points:
   1) Presence or absence of risk factors for FGR (see CQ309). (B)
   2) Malformation of the fetus and abnormal cord insertion based on an ultrasonography examination. (B)
   3) Changes in blood pressure, protein in the urine, and laboratory parameters such as the platelet count, antithrombin activity, aspartate transaminase (AST), lactate dehydrogenase (LDH), and uric acid levels. (C)
   4) Hyperglycemia, thyroid dysfunction, and anti-phospholipid antibodies. (C)
   5) Congenital infections, such as rubella, cytomegalovirus, and toxoplasma. (C)
2. Suspect chromosomal aberration in a case with multiple malformations, characteristic malformations suggestive of chromosomal aberration, and/or severe FGR. A chromosomal analysis for a definite diagnosis should only be performed after informed consent. (B)
3. Consider terminating the pregnancy after taking the results of the following examinations into account:
   1) Non-stress test (NST), contraction stress test (CST), and biophysical profile score (BPS). (B)
   2) Umbilical artery flow velocity wave form using Doppler ultrasonography (B)
   3) Serial changes in measurements of the fetus (C)
4. Monitor intrapartum fetal heart rate (FHR) patterns continuously. (B)

CQ311: How should women with placental abruption be treated?

Answer

1. Remember that pregnancy-induced hypertension, previous placental abruption, premature labor including premature rupture of the membranes, and trauma to the abdomen such as a car accident are risk factors for placental abruption. (B)
2. Suspect placental abruption and perform the following tests when a

woman shows abnormal fetal heart rate (FHR) patterns concomitant with clinical signs of premature labor, such as genital bleeding, increased uterine activity, and/or abdominal pain.

1) Ultrasonography. (B)

2) Blood test including platelet count, antithrombin (III) activity, FDP or D-dimer, aspartate transaminase (AST), and lactate dehydrogenase (LDH). (B)

3. Monitor the FHR patterns continuously in women with an increased uterine activity after trauma to the abdomen. (C)
4. Plan for prompt delivery, in principle, after the diagnosis of a placental abruption. (A)
5. Initiate treatment for disseminated intravascular coagulation (DIC) promptly using packed RBC, fresh frozen plasma, and antithrombin products when a patient/blood test shows signs of DIC. (A)
6. Choose either of the following two modalities in a patient with a fetal death caused by placental abruption after considering the patient's condition and the capacity of the facility while simultaneously assessing and treating the DIC. (B)

   1) Facilitated vaginal delivery with the aid of an amniotomy and/or oxytocin.

   2) Emergency cesarean section.
7. Consider expectant management in a patient with a placental hematoma if the patient shows all of the following signs: unchanged size of the hematoma, normal FHR patterns, no uterine contractions, and no exacerbation of laboratory parameters for hemostasis and coagulation. (C)

CQ312: How should women with preeclampsia be treated?

Answer

1. Recommend admission to the hospital. (C)
2. Collaborate with facilities that have a neonatal intensive care unit (NICU) when treating preeclamptic patients at < 32 weeks of gestation.
3. Determine an appropriate timing for pregnancy termination through

repeated assessments of physical and blood chemistry findings in the mother and fetal development and wellbeing. (B)

4. If a patient complains of epigastric pain and/or headache, measure the blood pressure and perform blood tests, a non-stress test, and an ultrasonography examination to diagnose the patient as having eclampsia, HELLP syndrome, or placental abruption. Take preventive measures for an eclamptic fit if indicated. (B)
5. Consider the induction of labor in patients with mild preeclampsia at ≥ 36 weeks of gestation. (C)
6. Measure the blood pressure regularly and prepare for an emergency cesarean section during a trial vaginal delivery. (B)
7. Monitor the intrapartum fetal heart rate (FHR) patterns continuously. (B)
8. Refer to Table 1 in choosing an appropriate drug for the control of hypertension. (C)

CQ313: How should women with presumptive fetal macrosomia be treated?

Answer

1. Consider possible macrosomia in a woman with glucose intolerance, an infant with a presumed heavy for date weight, and previous macrosomia and/or shoulder dystocia. (C)
2. Inform the patient of the difficulty in making an accurate antenatal diagnosis of macrosomia. Determine the delivery mode after discussing the issue with the patient. (C)
3. Consider an emergency cesarean delivery in women with prolonged or arrested labor. (C)
4. In treating women with shoulder dystocia, call the medical staff and use a suprapubic pressure with a combination of McRoberts' maneuver and an episiotomy. Do not use Kristeller's maneuver. (C)
5. Recommend a 75-g oral glucose tolerance test (OGTT) at 6 to 12 weeks postpartum in women with macrosomia/shoulder dystocia and an unknown status of glucose tolerance or non-gestational diabetes mellitus in the current pregnancy. (C)

CQ314: How should women with gestational diabetes mellitus (GDM), overt diabetes in pregnancy, or diabetes mellitus be treated?

Answer

1. Control the blood glucose levels to a fasting morning level ≤ 95 mg/dL, a pre-meal level ≤ 100 mg/dL, and a 2-h post-meal level ≤ 120 mg/dL. (C)
2. First, instruct the patient with regard to diet therapy; initiate insulin treatment in cases with uncontrolled blood glucose levels. (B)
3. Assess fetal wellbeing using a non-stress test (NST) and/or the biophysical profile score (BPS) at ≥ 32 weeks of gestation at an adequate interval. Recommend hospital admission if indicated. (C)
4. In women without blood glucose control, fetal wellbeing, or fetal development problems, treat with either of the following two modalities. (B)

   1) Expectant management, including waiting for labor onset, until the end of 40 weeks and subsequent labor induction at ≥ 41 weeks.

   2) Active management with induction of labor at ≥ 37 weeks, taking cervical maturation into account.
5. Be cautious of shoulder dystocia in cases with prolonged labor, augmentation of labor, and/or vacuum delivery. (C)
6. Determine the timing and mode of delivery individually for each case with uncontrolled blood glucose levels, exacerbated complications derived from glucose intolerance, and/or presumed macrosomia. (B)
7. Be cautious of respiratory distress syndrome in neonates born by elective cesarean section in women with a gestational week of < 39, uncontrolled blood glucose levels, or an unknown due date. (C)
8. Monitor intrapartum fetal heart rate (FHR) patterns continuously in women with diabetes mellitus. (B)
9. Maintain a blood glucose level between 70 to 120 mg/dL during parturition. (C)
10. Be cautious of hypoglycemia and monitor blood glucose levels with changing doses of insulin during parturition, since insulin demand decreases abruptly after delivery. (B)

CQ315: How should women with an increased risk of eclampsia be treated?

Answer

1. Measure the blood pressure (BP) and semiquantify protein in the urine in all women who are admitted for delivery. (B)
2. Measure the BP regularly at an appropriate interval in parturient women diagnosed as having pregnancy-induced hypertension, a positive urine protein result at admission, or the presence of hypertension at admission. (B)
3. Measure the BP if parturient women complain of headaches, blurred vision, or epigastric pain. (B)
4. Administer $MgSO_4$ with or without anti-hypertensive drugs to parturient women with severe hypertension (systolic BP ≥ 160 mmHg and/or diastolic BP ≥ 110 mmHg). Try to maintain a BP in the range of 140 – 159/90 – 109 mmHg. (C)
5. When women experience a convulsive fit, take all of the following measures: (B)

   1) Measure the BP.

   2) Administer diazepam (5 – 10 mg, i.v., in a bolus) or $MgSO_4$ (4.0 g, i.v., over 10 minutes).

   3) Maintain the airway and administer oxygen after the resolution of the convulsion.

   4) Initiate a continuous 24-hour i.v. of $MgSO_4$ (1.0 – 2.0 g/hour) for the prevention of recurrence
6. When women are found to be unconscious (or convulsive), perform all three of the following tests to rule out HELLP syndrome, brain hemorrhage, and brain infarct, initiate treatment for an eclamptic fit, and consider the possibility of hysteria, epilepsy, hypoglycemia, hyperventilation syndrome, and/or local anesthetics intoxication as differential diagnoses.

   1) Physical examinations for the detection of palsy of the extremities, presence of abnormal reflex, and anisocoria. (B)

   2) Blood test including a complete blood count (CBC), antithrombin

activity, aspartate transaminase (AST) level, alanine transaminase (ALT) level, lactate dehydrogenase (LDH), FDP or D-dimer level, and an arterial blood gas analysis. (B)

3) Brain CT/MRI, if necessary. (B)

7. Plan for an early delivery after stabilizing the condition of the patient, with careful attention to the fetal wellbeing. (B)

CQ316: How should women with peripartum massive bleeding be treated?

Answer

1. Assess deficiency in the circulating blood volume based on both the shock index (SI) value and the measured blood loss volume as follows: (B)
   SI = pulse rate (per minute) ÷ systolic blood pressure (mmHg)
2. When women exhibit an SI of ≥ 1.0 or an estimated blood loss of ≥ 1.0 L during vaginal delivery (≥ 2.0 L for cesarean delivery), treat as follows, while simultaneously clarifying and removing the cause of bleeding:
   1) Insert an i.v. catheter with a large gauge and replace a sufficient volume of fluid. (A)
   2) Consider a blood transfusion and the transportation of the patient to a secondary or tertiary hospital. (B)
   3) Monitor blood pressure, pulse rate, bleeding amount, and urine output. (A)
   4) Monitor the saturation of peripheral oxygen (SpO_2) level. (C)
3. When women exhibit continuous bleeding, a frequent SI of ≥ 1.5, an obstetrical DIC score of ≥ 8, or abnormal vital signs (oliguria, coldness of peripheral skin, or decreased SpO_2), treat as follows, while simultaneously clarifying and removing the cause of bleeding: (B)
   1) Declare an "obstetrical critical hemorrhage". (A)
   2) Initiate blood transfusion with packed RBC and fresh-frozen plasma if available. (B)
   3) Transport the patient to an appropriate institution. (A)
   4) Administer anti-DIC drugs and platelet concentrate to women with an obstetrical DIC score of ≥ 8. (C)
4. Uncross-matched group-specific blood, compatible red cell concentrate

transfusion with a different ABO, compatible fresh-frozen plasma transfusion with a different ABO, and compatible platelet concentrate transfusion with a different ABO can be administered to women who are suffering from "obstetrical critical hemorrhage" or imminent cardiac arrest as a result of hemorrhage in the absence of cross-matched group-specified blood. (B)

CQ317: How should "amnioinfusion" be considered?

Answer

1. Consider the effects of amniotic fluid infusion (amnioinfusion) as follows: (C)

   I. Intrapartum

   1) Amnioinfusion may favorably affect the fetal heart rate (FHR) pattern by decreasing the compression of the umbilical cord.

   2) Amnioinfusion has not been demonstrated to have a prophylactic effect on the development of meconium aspiration syndrome.

   II. Antepartum

   1) Amnioinfusion may be effective for improving the accuracy of antenatal diagnosis using ultrasonography in women with oligohydramnios.

   2) Whether amnioinfusion is beneficial to fetuses with long-term oligohydramnios remains to be studied.

2. Be cautious of amniotic fluid embolism, pulmonary edema and hypertonic uterus during the procedure. (B)

Chapter E. Parturition

CQ401: What medicines and apparatuses should be available in or near the delivery room?

Answer

1. Equip the apparatuses, instruments, and drugs shown in Tables 1 and 2.

CQ402: How should women with a breech presentation be treated?

Answer

1. Confirm that a woman meets all of the following three conditions necessary for the safe performance of external cephalic version. (C)
   1) Emergency cesarean section is available.
   2) No previous cesarean delivery.
   3) Fetus is mature.
2. Choose elective cesarean delivery for a patient with a knee or foot presentation, an estimated fetal weight of < 2500 g, a gestational week of < 37, or presumed cephalic-pelvic disproportion. (C)
3. Be able to consider a vaginal delivery in a women without the characteristics described in Answer 2 after fulfilling both of the following two requirements: (C)
   1) Availability of well-trained and full-time medical staff with experience performing breech deliveries.
   2) Women are informed of the risks and benefits of both vaginal and cesarean deliveries.
4. Obtain written informed consent before performing a vaginal breech delivery. (A)

CQ403: How should women who wish to undergo a trial of labor after cesarean delivery (TOLAC) be treated?

Answer

1. Obtain written informed consent for TOLAC in which the risks associated with a TOLAC are described. (A)
2. Confirm that a woman meets all of the following five conditions necessary for a safe TOLAC: (C)
   1) No presumed cephalopelvic disproportion.
   2) Availability of emergency cesarean delivery and emergency treatment for uterine rupture.
   3) Only one previous cesarean delivery.
   4) Previous uterine incision was a low transverse incision with an uneventful postpartum course.
   5) No history of uterine rupture or trans-myometrial surgery.
3. Do not use prostaglandin for the induction and/or augmentation of labor.

(A)

4. Monitor fetal heart rate (FHR) patterns using cardiotocography during TOLAC. (A)
5. Pay attention to vital signs and abdominal pain in the mother after completing vaginal delivery. (B)

CQ404: How should women with prolonged labor as a result of weak labor pains be treated?

Answer

1. Recommend the oral intake of water or administer i.v. fluids. (B)
2. Adhere strictly to the "Guidelines for the use of uterotrophic drugs in Japan 2011" and perform all of the following steps when using uterotrophic drugs. (A)

   1) Obtain informed consent for the use of uterotrophic drugs.

   2) Do not use multiple uterotrophic drugs simultaneously.

   3) Apply a cardiotocogram prior to the administration of the uterotrophic drugs.

   4) Use an infusion pump for the i.v. administration of the uterotrophic drug and increase the dose at an interval of ≥ 30 min.

   5) Assess uterine activities, maternal blood pressure, and pulse rate every hour, in principle.

   6) Record the fetal heart rate (FHR) pattern continuously using a cardiotocogram, in principle.

   7) Transient discontinuation of FHR monitoring with the cardiotocogram is feasible at the physician's discretion.

   8) A well-trained nurse, midwife, or doctor should watch the FHR pattern.

   9) Consider withholding the uterotrophic drug if an abnormal FHR pattern appears.

   10) Remember that no exceptional use is allowed for the initiation dose, the dose increment, or the maximum dose.
3. Remind that cord prolapse may occur after an amniotomy or the spontaneous rupture of the fetal membranes. Perform an amniotomy after confirming "the engagement of the fetal head". (B)

4. Record the FHR pattern continuously with a cardiotocogram in febrile women with a body temperature of ≥ 38.0°C. (B)
5. Be careful of postpartum hemorrhage as a result of uterine atony. (B)
6. Do not inject prostaglandin $F_2\alpha$ into the uterine muscle of postpartum women. (A)

CQ405: How should the induction of labor at term not medically indicated be dealt with?

Answer

1. Be able to induce labor on the demand of a woman or after informed consent with respect to the benefits and risks associated with the induction of labor. (B)
2. Adhere strictly to the Answers in "CQ412" regarding the induction of labor. (A)
3. Adhere strictly to the "Guidelines for the use of uterotrophic drugs in Japan 2011" regarding the use of uterotrophic drugs. (A)

CQ406: What criteria are necessary for a safe operative delivery?

Answer

1. Only a well-trained doctor or a doctor supervised by a well-trained doctor should perform operative deliveries such as vacuum and forceps deliveries. (B)
2. Monitor the fetal heart rate (FHR) patterns continuously during operative deliveries. (C)
3. Use operative deliveries only in women who meet at least one of the following conditions. (B)

   1) Prolonged labor or arrested labor.

   2) A shortened second stage of parturition is desired because of unfavorable maternal conditions.

   3) A non-reassuring fetal status.
4. Use operative deliveries only in women who meet all four of the following conditions.

   1) Gestational age of ≥ 35 weeks. (C)

2) No presumed cephalopelvic disproportion. (A)
3) Completely dilated uterine cervix with ruptured fetal membranes. (B)
4) After engagement of the fetal head (station plane of 0 cm). (B)

5. Pull during uterine contractions, in principle. (B)
6. Do not use vacuum delivery for more than 20 minutes. Consider forceps or an emergency cesarean delivery if necessary (20-min vacuum trial rule). (C)
7. Do not use vacuum delivery after more than 5 vacuum trials even in a situation meeting the 20-min vacuum trial rule (5-time vacuum trial rule). (C)
8. Use outlet-, low-, or lower mid-forceps delivery only in women with both a fetal rotation of < 45 degrees and an occiput anterior, in principle. Only a well-trained physician or a physician supervised by a well-trained physician should perform a forceps delivery in situations other than that described above. (B)

CQ407: How should women with meconium staining be treated?

Answer

1. Pay attention to meconium staining in women with ruptured fetal membranes. (B)
2. Apply cardiotocogram to women with meconium staining for at least 20 minutes to confirm fetal wellbeing. (B)
3. No specific treatment is required in women with normal fetal heart rate (FHR) patterns. (B)
4. Be cautious of respiratory problems, such as meconium aspiration syndrome, in the neonate. (B)

CQ408: How should a fetus with possible hypoxemia be resuscitated?

Answer

1. Remember that there are no reliable means of improving oxygenation in a fetus. (B)
2. Consider withholding the uterotrophic drug, if such a drug is being used. (A)

3. The following methods may favorably affect the fetal condition:(C)
   1) Change in the maternal position from supine to lateral.
   2) Oxygen inhalation with a dose of 10 to 15 L/minute.
   3) Administration of a tocolytic drug, such as ritodrine (300 mL/hour of a bottle containing 50 mg/500 mL), while the mother is in a lateral position.
   4) Rapid infusion of lactate Ringer solution (500 mL/20 min).
   5) Infusion of warmed normal saline into the uterus (see CQ317).
4. Perform an immediate delivery if fetal compromise as a result of hypoxemia is strongly suspected. (A)

CQ409: How should women at ≥ 41 weeks of gestation be treated?

1. Confirm the estimated date of confinement using fetal measurements obtained during the early stage of pregnancy. (A)
2. Assess fetal wellbeing once or twice a week. (B)
3. Induce labor or conduct watchful waiting (expectant management) depending on the cervical maturation between $41^{-0/7}$ and $41^{-6/7}$ weeks of gestation. (B)
4. Consider induction of labor in women at ≥ 42 weeks of gestation. (B)
5. Adhere strictly to the "Guidelines for the use of uterotrophic drugs in Japan 2011" when using uterotrophic drugs. (A)

CQ410: How should parturient women be treated?

Answer

1. A physician, mid-wife, or well-trained nurse can manage parturient women. (A)
2. Use a 3 cm/min flow velocity for the paper that traces the fetal heart rate (FHR) pattern when using a cardiotocogram. (B)
3. Obtain a cardiotocogram for at least 20 minutes upon admission or during the first stage of labor to confirm fetal wellbeing. (B)
4. Once fetal wellbeing has been confirmed as described in Answer 3, fetal wellbeing may be monitored using intermittent FHR auscultation (once every 15 – 90 minutes) until the next application of a cardiotocogram within 6 hours in women without characteristics described in Answer 5.

Continuous FHR monitoring throughout the first stage of labor is feasible. (B)

5. Monitor the FHR pattern continuously in women with the following characteristics. Transient discontinuation of FHR monitoring is feasible at the physician's discretion.

   1) During the use of uterotrophic drug such as oxytocin. (A)

   2) During the second stage of labor, in febrile women (≥ 38.0°C), during the use of a metreurynter containing ≥ 41 mL, and during painless labor with anesthetics. (B)

   3) Women requiring "increased monitoring" according to Tables I, II, and III in CQ411. (B)

   4) High risk pregnancies with any of the following characteristics: (B)

      Maternal factors, including diabetes mellitus, pregnancy-induced hypertension, previous stillborn or infant with cerebral palsy as a result of intrapartum fetal hypoxemia at ≥ 30 weeks of gestation, or a previous surgical incision into the uterine cavity.

      Fetal factors, including a non-vertex presentation, an estimated fetal body weight of < 2,000 g, fetal growth restriction, and multiple pregnancies.

      Placental factors, such as a low-lying placenta.

   5) Other women suspected of having poorly controlled maternal complications. (C)

6. Apply a cardiotocogram for at least 20 minutes in woman with any of the following situations:

   1) Rupture of the fetal membranes. (B)

   2) Meconium staining or bloody amniotic fluid. (B)

   3) When bradycardia or tachycardia is noted during intermittent FHR auscultation. (A)

   4) When the rapid progress of labor is noted or a change in the fetal position is anticipated after urination or defecation. (C)

7. Review the FHR patterns that are being continuously monitored by a cardiotocogram at the following intervals: (C)

   1) For those who are not at a high risk or those who have an FHR pattern

of level 1 or 2: every 30 and 15 minutes during the first and second stages of labor, respectively.

2) For those at high risk or those who have an FHR pattern of level 3: every 15 and 5 minutes during the first and second stages of labor, respectively.,

3) For those who show an FHR rate pattern of level 4 or 5: watch continuously.

CQ411: How should various fetal heart rate (FHR) patterns be interpreted and how should women with a non-reassuring fetal status be treated?

Answer

1. Consider that the wellbeing of a fetus can be assured if the FHR pattern has a normal baseline, a normal baseline variability, the presence of acceleration, and the absence of deceleration. (A)
2. Consider that the wellbeing of a fetus may be impaired if any of the following FHR patterns are present: (B)
   1) Recurrent late decelerations with absent baseline variability.
   2) Recurrent variable decelerations with absent baseline variability.
   3) Prolonged deceleration with absent baseline variability.
   4) Severe bradycardia with decreased or absent baseline variability.
3. Diagnose a fetus as having a non-reassuring fetal status if an FHR pattern level of 3 to 5 (mild, moderate, and severe variant patterns, as shown in Table I) is present as classified using a combination of three factors: the baseline variability, the baseline, and the presence of various decelerations. (C)
4. Choose one of five treatments (no intervention, increased monitoring, conservative measures for resuscitation of the fetus, preparation for prompt delivery, and prompt delivery) in cases with an FHR pattern of level of 1 to 5, referring to Table III and taking gestational age, the background of the women, and the capacity of the facility into account. (C)
5. Repeatedly assess the feasibility of a successful vaginal delivery taking progression and the stage of labor into account in those who continue to

show a level 3 or 4 FHR pattern. (C)

6. Perform an emergency cesarean section soon after abandoning vaginal delivery in the situation described in Answer 5. (C)

CQ412: How should labor be induced?

Answer

1. Adhere strictly to the "Guidelines for the use of uterotrophic drugs in Japan 2011" regarding the use of uterotrophic drugs such as i.v. oxytocin, i.v. prostaglandin $F_2\alpha$, and oral prostaglandin PGE_2 tablets. (A)
2. Do not administer multiple uterotrophic drugs simultaneously. (A)
3. Ripen the uterine cervix first if the cervix is unfavorable for the induction of labor. (C)
4. Remember the following three precautions regarding the use of hygroscopic mechanical dilators, such as laminaria rods or a transcervical balloon catheter of ≤ 40 mL, for the ripening of the cervix.

   1) Obtain informed consent as to the indications, methods and possible adverse events associated with these procedures. (B)

   2) Perform the procedure in hospitalized women. (B)

   3) Pay attention to the possibility of infection regardless of the status of the fetal membranes. Assess the maternal body temperature and the results of laboratory tests, and consider the administration of antibiotics in women with ruptured fetal membranes. (B)
5. In addition, remember the following four cautions regarding the use of a transcervical balloon catheter of ≤ 40 mL for the ripening of the cervix.

   4) Obtain informed consent regarding the possible risk of umbilical cord prolapse associated with the use of transcervical balloon catheters. (B)

   5) Confirm the absence of the umbilical cord near the presenting part of the feus prior to the start of the procedure. (B)

   6) Promptly apply a cardiotocogram after the commencement of labor. (B)

   7) Promptly confirm the absence of prolapse or the descent of the cord at the time of the rupture of the fetal membranes or the balloon prolapse. (B)
6. In addition, remember the following three cautions regarding the use of a

transcervical balloon catheter of > 40 mL for the ripening of the cervix.

8) Perform continuous FHR monitoring with a cardiotocogram. (B)

9) Use a transcervical balloon catheter ≤ 150 mL for vertex presentation. (B)

10) Ensure the availability of an emergency caesarean section. (C)

7. Do not administer uterotrophic drugs while using laminaria rods and/or sodium prasterone sulfate hydrate. (B)
8. When combining the use of a transcervical balloon catheter and a uterotrophic drug, monitor the FHR for at least one hour after the application of the transcervical balloon catheter, then initiate the uterotrophic drug. (B)
9. When using an i.v. uterotrophic drug after the use of oral PGE_2, initiate i.v. oxytocin or i.v. prostaglandin $F_2\alpha$ at an "initiation dose" at least one hour after the last oral PGE_2 administration. Pay close attention to excessive increases in uterine activity. (B)

CQ413: How should a woman with labor pains or some relevant problem be treated in the absence of data necessary for the management of pregnant women because of a lack of antenatal visits?

Answer

1. Consider her pregnancy to be high risk. (B)
2. Assess the gestational week. (B)
3. Perform tests recommended during routine antenatal care. (B)
4. Try to identify the patient and to confirm that the address/phone number of her family contact is accurate. (B)
5. Listen to her background in a supportive manner. Consult a city officer to seek public support for her as soon as possible if no support is available from her family. (C)
6. Try to create better surroundings for the newborn by keeping in contact with the woman after discharge from the hospital through visits by regional public health nurses. (C)

CQ414: How may safety be assured in a "midwife-managed care system"?

Answer

1. A “Midwife-managed care system” is defined as that in which midwives care for pregnant and parturient women in the absence of an attending physician by adhering to institutional rules made by responsible physicians and midwives, with the assurance of a prompt switch from midwife care to physician care in the institution. (B)
2. Midwife care for pregnant and parturient women is low risk when performed according to institutional rules made by referring to Tables 1, 2, 3, and 4 in the “midwife-managed care system”. (C)

Chapter F. Incidental complications

CQ501: How should one respond when asked about the outcome of pregnancy complicated with uterine fibroma?

Answer

1. Respond as follows:

   1) The pregnancy outcome is fairly good. However, there may be increased risks of complications such as premature labor, an abnormal position of the fetus, placenta previa, placental abruption, poly- or oligohydramnios, or premature membrane rupture. (B)

   2) Approximately 20% of women experience transient pain (for 1 to 2 weeks) originating from the fibroma. (B)

   3) There may be increased risks of dystocia, increased bleeding, labor arrest, and cesarean delivery. (B)

   4) The risks and benefits of a myomectomy during pregnancy and a cesarean section are uncertain at present. (C)

   5) There may be an increased risk of a hysterectomy postpartum because of the degeneration/infection of the fibroma/uterus. (C)

CQ502: How should women with an abnormal uterine cervical cytology result during early pregnancy be treated?

Answer

1. Perform colposcopy and biopsy, in principle, for patients with abnormal cytology (LSIL, HSIL, and others in the Bethesda system, and classes III,

IV, and V in the former system). (B)

2. Treat women with histologically confirmed cervical intraepithelial neoplasia in the absence of cell cytology suggestive of invasive cancer conservatively without conization. (B)
3. Perform conization in cases with any of the following characteristics: (A)
   1) Histologically confirmed microinvasive squamous cell carcinoma.
   2) Histologically confirmed intraepithelial neoplasia but cell cytology indicative of invasive cancer.
   3) Histologically confirmed adenocarcinoma in situ.
4. Conservative treatment without termination of the pregnancy is feasible in cases with squamous cell carcinoma stage Ia1 without lymphvascular space invasion or adenocarcinoma in situ in the conization specimen. (B)
5. Repeat the cytology examination during pregnancy in women with conservative treatment. (A)
6. Vaginal delivery is feasible in women with conservative treatment. (A)
7. Reevaluate the disease status using cytology, colposcopy, and biopsy 4 to 8 weeks postpartum. (B)

CQ503: How should pregnant women with postconization uterus be treated?

Answer

1. Note that women are at an increased risk of preterm labor after undergoing cervical conization. (A)
2. Be cautious of signs of preterm labor, such as the shortening of the uterine cervix and increased uterine activity. (B)
3. Consider therapeutic cervical cerclage in women with a shortened uterine cervix. (C)

CQ504: How should women with an ovarian cyst detected during early pregnancy be treated?

Answer

1. Use ultrasonography to visualize the ovarian cyst and assess the possibility of malignancy; monitor the size of the ovarian cyst to rule out the possibility of a common “corpus luteum cyst”, which may resolve

spontaneously. (A)

2. Treat women with ultrasonography findings suggestive of an ovarian cyst appearing as a tumor-like lesion, such as a corpus luteum cyst or an endometriotic cyst, conservatively. (B)
3. Treat woman with an ovarian cyst with the characteristic ultrasonographic features of a benign lesion as follows: (C)

   1) An ovarian cyst with a largest diameter < 6 cm or a unilocular ovarian cyst with a largest diameter of < 10 cm: conservative treatment without surgical intervention.

   2) An ovarian cyst with a largest diameter ≥ 10 cm or a multilocular ovarian cyst with a largest diameter ≥ 6 cm: surgical removal of the cyst, preferably after 12 weeks of gestation.
4. Remove the tumor surgically irrespective of the size and gestational age if a borderline or malignant tumor is suspected. (B)
5. Remove the cyst surgically irrespective of the nature of the cyst and the gestational age in cases with severe abdominal pain as a result of ovarian torsion, rupture, or bleeding. (A)

CQ505: How should women with decayed teeth and/or periodontal diseases be treated?

Answers

1. Recommend a visit to a dentist when asked about decayed teeth and/or periodontal diseases, since pregnancy may have an unfavorable effect on the progression of these diseases. (B)
2. Remember that favorable effects of treatment on the risks of preterm birth and fetal growth restriction (FGR) have not been demonstrated, although periodontal diseases are reportedly associated with preterm birth and FGR. (C)

Chapter G. Infection

CQ601: How should pregnant women with bacterial vaginosis (BV) be treated?

Answer

1. Treat women with symptomatic BV using antibiotics. (B)
2. Detect patients with BV by screening all women with known risk factors of preterm delivery, such as previous preterm delivery, and treat patients with BV using antibiotics as soon as possible. (C)

CQ602: How should pregnant women with urogenital *Chlamydia trachomatis* infections be treated?

Answer

1. Screen all women for the detection of *C. trachomatis* infection using a swab specimen sampled from the endocervix for the prevention of neonatal *C. trachomatis* infection. (B)
2. Detect *C. trachomatis* in specimens using nucleic acid amplification tests, nucleic acid hybridization tests, direct immunofluorescence, enzyme immunoassay (EIA), or culture method. (B)
3. Treat with a single dose of oral azithromycin (1.0 g) or oral clarithromycin (200 mg × 2/ day, 7 days). (B)

CQ603: How should women with genitourinary group B streptococcal (GBS) infection be treated?

Answer

1. Screen all women at 33 to 37 weeks of gestation for the detection of GBS infection using a culture method for specimens from the vagina, perineum, and rectum. (B)
2. Administer i.v. penicillin/ampicillin to women with any of the following characteristics to prevent early-onset GBS diseases of the infant during labor or after premature membrane rupture: (B)

   1) GBS infection in a previous infant (even in the absence of GBS in the current pregnancy).

   2) All women with a positive GBS result except for women undergoing an elective cesarean section.

   3) Women with an unknown GBS status.
3. Remember that a 3-day antibiotic administration period is sufficient to eradicate GBS in women with premature membrane rupture. (C)

CQ604: How should pregnant women with an antibody against toxoplasma be treated?

Answer

1. Estimate the timing of the toxoplasma infection using specific IgG and IgM antibodies against toxoplasma. (B)
2. Remember that a positive IgM antibody does not necessarily indicate a recent infection occurring within several months, since the phenomenon of "persistent IgM" in which positive IgM antibodies sometimes persist for a long time (≥ three months) has been known to occur. (B)
3. Administer oral acetylspiramycin to women infected after the establishment of the current pregnancy. (B)
4. Consider the administration of pyrimethamine and sulphadiazine between 16 and 27 gestational weeks in women with a suspected fetal infection. (C)

CQ605: How should women with rubella infection during pregnancy be treated?

Answer

1. Screen all women to detect patients with rubella infection during an early stage of pregnancy using HI (titer of antibody against rubella). (A)
2. Obtain the following information from women during an early stage of pregnancy. (B)
   1) Contact with rubella patients during the past three months.
   2) Skin rash during the past three months.
   3) Febrile disease during the past three months.
   4) Swelling of cervical lymph nodes during the past three months.
   5) Occupation during the past three months.
3. Take diagnostic measures in women with any of the following findings: (B)

   1) Symptoms suggestive of rubella infection, such as skin rash, febrile condition, and swollen lymph nodes.
   2) Contact with rubella patients.

3) Titer of antibody (HI) ≥ × 256 during early pregnancy.

4. Remember that diagnostic measures should include both repeated measures of the HI titer in paired sera samples and measures of specific IgM antibody. (B)
5. Administer vaccine to postpartum women with an HI antibody titer ≤ ×16. (C)

CQ606: How should women with HBs-antigen be treated?

Answer

1. Determine the status of HBe-antigen and liver function and tell women about the risk of HBV vertical transmission. (A)
2. Recommend a visit to an appropriate physician. (C)
3. Take measures including the administrations of HB immunoglobulin and vaccination against HBV to prevent HBV vertical transmission, in cooperation with pediatricians. (A)
4. Tell women that breastfeeding does not increase the risk of HBV vertical transmission, providing that preventive measures are being taken. (B)

CQ607: How should women with HCV-antibody be treated?

Answer

1. Quantify HCV-RNA in the blood and examine liver function. (A)
2. Tell women with undetectable HCV-RNA as that HCV vertical transmission does not occur. (B)
3. Tell women with detectable HCV-RNA as that there may be a risk of HCV vertical transmission. Recommend visit to appropriate physicians. (B)
4. Tell women with detectable HCV-RNA as that breastfeeding is not limited for the prevention of vertical transmission. (C)
5. Provide information on the Japanese vertical transmission rates according to titers of HCV-RNA and delivery modes in women with a higher HCV-RNA. Help women to choose a delivery mode according to these data. (C)

CQ608: How should pregnant women with genital herpes be treated?

Answer

1. During the first trimester, apply acyclovir ointment to the lesions and advise the patient to refrain from sexual activities. (B)
2. During the second or third trimester, administer systemic anti-viral drugs to women with a primary infection or first-episode disease. (B)
3. Recommend an elective cesarean section in women with any of the following statuses.

   1) Presence of genital lesions at supposed time when labor will occur. (A)

   2) Labor pains occurring within four weeks of the manifestation of the primary infection. (C)

   3) Labor pains occurring within one week of the manifestation of a recurrence or nonprimary first-episode disease. (C)
4. Pay attention to the neonate with respect to symptoms derived from vertical transmission. (B)

CQ609: How should women with cytomegalovirus (CMV) infection be treated?

Answer

1. Remember that the clinical usefulness of screening for CMV infection has not been established. (C)
2. Consider that fetuses with growth restriction, enlarged cerebral ventricle, microcephalus, a high-echoic periventricular area, ascites, and/or hepatosplenomegaly may be infected with CMV. (C)
3. Interpret the results of maternal CMV-antibody as follows. (B)

   1) Diagnose as primary infection during pregnancy when seroconversion (change from a negative CMV-IgG during early pregnancy to a positive CMV-IgG during pregnancy) is observed.

   2) The effects of CMV on the fetuses are milder in women who acquired CMV before pregnancy (a positive CMV-IgG during early pregnancy), compared with those of a primary infection during pregnancy, although adverse effects on the fetuses may occur.

   3) Consider recent infection in women with a positive CMV-IgM, but be cautious of persistent CMV-IgM (the phenomenon of long-lasting IgM

positivity).

4. Tell women with CMV infection that no helpful fetal therapy has been established. (B)
5. Remember that infected fetuses are likely to have an abnormal fetal heart rate pattern during labor. (C)
6. Diagnose as congenital infection when CMV-IgM is detected in the cord blood and/or CMV is detected in the urine of neonates within 2 weeks after birth. (B)
7. Refer infants with congenital infection to an appropriate physician for the long-term follow-up of auditory function. (B)

CQ610: How should women with HIV infection be treated?

Answer

1. Screen all women for the detection of patients with HIV infection early during pregnancy using tests for HIV screening. (B)
2. In cases with a positive screening test result, do the following: (A)
   1) Inform the woman that 19 out of 20 women with a positive screening test result are not actually infected.
   2) Perform a western blotting test and a nucleic acid amplification test simultaneously to confirm the screening result.
3. Consult with a regional designated hospital regarding patients with HIV/AIDS. (C)
4. Perform all of the following measures to prevent vertical transmission. (B)
   1) Treat infected women with antiretroviral drugs during pregnancy.
   2) Elective cesarean delivery.
   3) Formula milk feeding.
   4) Prophylactic administration of antiretroviral drugs to the neonate.

CQ611: How should pregnant women with varicella infection be treated?

Answer

1. Tell women as follows when asked about varicella infection during pregnancy:

1) Women with neither a history of varicella infection nor vaccination against varicella should refrain from contact with patients with varicella. (A)

2) Congenital varicella syndrome is reportedly seen in 0.55%, 1.4%, and 0.0% of neonates born to mothers infected with varicella during the first-, second-, and third-trimesters of their pregnancies, respectively. (B)

3) No infants with congenital varicella syndrome and/or malformation as a result of varicella infection have been born to mothers in whom an erroneous vaccination was administered during the 3 months prior to the establishment of pregnancy or during pregnancy. (B)

2. Do not administer varicella vaccine to pregnant women. (A)
3. Administer prophylactic i.v. gammaglobulin (2.5 g to 5.0 g) to women who have been in close contact with a patient infected with varicella during the previous 2 weeks and who may be susceptible to varicella infection because of a possible lack of antibody. (C)
4. Administer acyclovir to pregnant women with varicella infection to prevent serious complications. (C)
5. Treat the mother and neonate as follows when the mother manifests a varicella infection during the 5 days prior to delivery or 2 days postpartum:

   1) Administer acyclovir to the mother. (B)

   2) Administer i.v. gammaglobulin to the neonate. (B)

   3) Administer acyclovir to neonates with symptoms of varicella infection. (B)
6. Isolate in-hospital pregnant women with varicella infection in a private room away from other women to prevent in-hospital horizontal transmission. (C)

CQ612: How should women with a positive screening test result for HTLV-1 infection be treated?

Answer

1. Note that a considerable number of women show a false-positive result on screening tests for HTLV-1 infection (PA: particle agglutination or ELISA:

enzyme linked immunosorbent assay). (A)

2. Diagnosis as an HTLV-1 carrier only after a confirmation test (western blot analysis) shows a positive result. (A)
3. Inform women of their diagnosis as an HTLV-1 carrier very carefully, with consideration of ethical problems. (A)
4. Inform the patient's family of their diagnosis as an HTLV-1 carrier only after receiving the patient's permission. (B)
5. Instruct the patient in the following methods as alternatives to breastfeeding for the prevention of HTLV-1 vertical transmission: (B)
   1) Formula milk feeding.
   2) Frozen-thawed breast milk.
   3) Short-term breastfeeding within the first three months after birth.

CQ613: How should women with syphilis be treated?

Answer

1. Screen all women for the detection of patients with syphilis using two methods (a non-specific test and a specific test for *T. pallidum)*. (A)
   1) Non-specific tests include serological tests for syphilis (STS), such as an agglutination test, VDRL test, or RPR card test.
   2) Specific tests include FTA-ABS and TPHA.
2. Promptly administer antibiotics, such as penicillin, to women with active syphilis. (A)
3. Assess the fetus during the latter half of the pregnancy with respect to signs of infection, such as hepatomegaly, ascites, hydrops, and a thickened placenta, in infected women. (C)
4. Assess the effect of treatment at 28 – 32 weeks of gestation and perinatally using the STS titer. (C)
5. Remember that physicians must notify the regional public health center within 7 days of diagnosing a new patient with syphilis according to the Infectious Diseases Control Law, in which syphilis is classified as a fifth class infectious disease. (A)
6. Examine the neonate born to an infected mother with respect to congenital syphilis, according to Table 2. (A)

CQ614: How should women with parvovirus B19 (PB19) infection be treated?

Answer

1. Remember the following two points: (B)
   1) Co-living with a patient with PB19 infection is a risk factor.
   2) Flu-like symptoms associated with erythema and arthralgia are signs of a PB19 infection.
2. Determine the anti-PB19 IgM titer if a PB19 infection is suspected. (B)
3. Assess fetal anemia and hydrops in cases with maternal PB 19 infection, since approximately 10% of such fetuses develop anemia, hydrops and/or die. (C)
4. Consider PB19 infection as a differential diagnosis for fetal hydrops. (B)
5. Recommend that infected women wash their hands and wear a flu mask to prevent in-hospital horizontal transmission. (C)
6. Remember that the following facts are known about PB infection during pregnancy: (C)
   1) Ninety percent of hydrops fetalis cases develop within 8 weeks (median, 3 weeks) after maternal infection with PB 19.
   2) Fetal mortality is higher for maternal infection at < 20 weeks of gestation than for maternal infection at > 20 weeks.
   3) Spontaneous remission occurs in one third of hydrops fetalis cases.
   4) A blood transfusion to the fetus may be effective for improving the outcome.
   5) The outcome of the surviving fetuses with PB 19 infection is similar to that of non-infected fetuses.

Chapter H. Twin pregnancies

CQ701: How should chorionicity and amnionicity be determined for a twin pregnancy?

Answer

1. Determine chorionicity until the end of 10 weeks of gestation. (A)
2. Count the numbers of chorions and amnions using ultrasonography to determine the chorionicity and amnionicity. (A)

1) Diagnose as monochorionic and dichorionic twins in cases with one and two gestational sacs (GS), respectively, since the number of GS equals that of the chorion.

2) Diagnose as dichorionic in cases with a relatively thick dividing membrane (inter-twin septum).

3) Diagnose as diamniotic in cases of monochorionic twins with a thin dividing membrane.

4) Presume monochorionic monoamniotic twins and repeat the ultrasonography examination in cases with an unrecognizable dividing membrane.

3. Determine the chorionicity and amnionicity referring to the presence or absence of a twin peak sign, the number of placentas, and the fetal sex in cases with undetermined chorionicity at ≥ 14 weeks of gestation. (B)

CQ702: How should women with monochorionic twin pregnancies be treated?

Answer

1. Refer women to secondary or tertiary institutions or treat the women in cooperation with those institutions. (B)
2. Provide information on the risks associated with monochorionic twins. Be cautious of the occurrence of twin-to-twin transfusion syndrome and twin reversed arterial perfusion sequence.
3. Determine amnionicity (mono- or di-) before 14 weeks of gestation. (B)
4. Examine using ultrasonography at least once every two weeks in cases with monochorionic diamniotic twin pregnancy, paying attention to discordances in volumes of the amniotic fluid and/or fetal development. (C)
5. Provide information on the risk of sudden fetal death as a result of cord entanglement in women with monoamniotic twins. (C)

CQ703: How may twin-to-twin transfusion syndrome (TTTS) and a twin reversed arterial perfusion (TRAP) sequence be detected in monochorionic twin pregnancies?

Answer

1. Presume TTTS and examine extensively in a case with a tendency toward polyhydramnios in one twin and oligohydramnios in the co-twin. (B)
2. Presume a TRAP sequence and examine extensively when a dead twin is growing. (B)

CQ704: How should women with twin pregnancies and a single fetal death be treated?

Answer

1. Manage expectantly, but pay attention to maternal DIC in dichorionic twin pregnancies. (B)
2. Manage expectantly, but pay attention to anemia and the wellbeing of the surviving twin in monochorionic twin pregnancies. (C)
3. Inform women with a monochorionic placenta that the surviving twin is at an extraordinarily high risk of developing permanent disabilities or perinatal mortality, even with the best of treatment. (C)

CQ705: What general cautions are needed when managing women with twin pregnancies?

Answer

1. Pay attention to clinical signs of preterm labor in the latter half of the pregnancies. (A)
2. Provide adequate tests for the detection of pregnancy-induced hypertension, HELLP syndrome and venous thromboembolism during the latter half of the pregnancies. (C)
3. Pay closer attention to fetal wellbeing at ≥ 37 weeks of gestation in twin pregnancies than in singleton pregnancies. (B)
4. Refer to the following when choosing a delivery mode: (C)
   1) Both twins are cephalic presentation: vaginal delivery
   2) First twin is cephalic and the second twin is non-cephalic: similar cautions to those for the vaginal delivery of a singleton with a breech presentation are required during the vaginal delivery trial (see CQ402).
   3) First twin is non-cephalic presentation: elective cesarean section.

5. Monitor the fetal heart rate (FHR) patterns of both fetuses continuously and simultaneously during labor. (B)
6. Confirm the fetal position and FHR pattern of the second twin immediately after the vaginal birth of the first twin. (B)
7. Pay attention to postpartum hemorrhage and venous thromboembolism. (C)

Chapter I. Newborns

CQ801: How should neonates with birth asphyxia be resuscitated?

Answer

1. Physicians, midwives and nurses are required to make every effort to acquire knowledge and the necessary skills to perform neonatal resuscitation, since one in 100 neonates requires resuscitation just after birth. (A)
2. Assess the following three points just after birth. (A)
   1) Not an immature infant.
   2) Good breathing/crying.
   3) Good muscle tone.
3. Care for neonates routinely as shown in Table 1 in cases meeting all three conditions described in Answer 2. (B)
4. Perform the "primary resuscitative procedures" shown in Table 2 if any abnormality is present among the three conditions shown in Answer 2. (B)
5. Take further resuscitative measures in cases in which "primary resuscitative procedures" have failed, referring to Fig. 1 posted on the wall of the delivery room. (C)
6. Determine the Apgar scores at 1 and 5 minutes and record them. (B)
7. Analyze the umbilical arterial blood gas and record the findings. (C)
8. Be cautious of maintaining an adequate neonatal body temperature. (B)
9. Consult neonatologists or experienced physicians if there is any concern regarding the neonate's condition. (B)

CQ802: How should newborns be cared for within 10 days after birth?

Answer

1. Apply eye drops or ointment containing antibiotics to the eyes of newborns to prevent conjunctivitis. (B)
2. Attempt to find any congenital anomalies. (B)
3. Confirm the absence of extremity paralysis and cephalohematoma. (A)
4. Regularly assess body temperature, body weight, respiration, feeding conditions, activities, and skin color (jaundice and cyanosis). (B)
5. Remember that clinical impressions, such as a lack of vigor, bad skin color, or tachypnea, are often clues for the diagnosis of specific abnormalities in newborns. (B)
6. Suspect a possible infection, hypoglycemia, congenital heart disease, gastrointestinal disease, hemolytic disease, or congenital metabolic disease if a neonate exhibits any of the abnormalities described in Answer 5. (B)
7. Administer vitamin K to neonates in an adequate manner (refer to the Discussion). (B)
8. Provide mass-screening tests for the detection of congenital metabolic diseases and an auditory test to neonates after obtaining the parents' informed consent. (C)
9. Remember that discharge from the hospital within 3 days after birth is associated with an increased risk of re-hospitalization for jaundice and/or dehydration. (C)
10. Keep in contact with regional public health nurses or city officers who may be concerned with neonatal health, if necessary. (C)
11. Support mothers to establish breastfeeding. (C)
12. Pay attention to the safe preparation and preservation of formula milk, referring to Table 2. (B)

CQ803: What information concerning RSV (Respiratory Syncytial Virus) is helpful for preterm infants (< 36 weeks of gestation) leaving the hospital?

Answer

1. Preterm infants (< 36 weeks of gestation) with RSV infection are likely to develop severe complications. (C)

2. The prophylactic administration of certain drugs to preterm infants during RSV season prevents or reduces severe complications caused by RSV. (C)
3. Provide information on clinics at which drugs for RSV prophylaxis are available. (C)

CQ804: How should the cause of intrauterine fetal death (IUFD) at ≥ 22 weeks of gestation be determined and how should women with IUFD be treated?

Answer

1. Estimate the time of IUFD in an integrated manner. (A)
2. Determine the cause of death using the following tests:
   Fetal factors
   1) Macroscopic inspection of the stillborn infant, placenta and the umbilical cord. (A)
   2) Histopathological examination of the placenta and umbilical cord. (C)
   3) Autopsy of the stillborn infant. (C)
   4) X-ray examination of the whole body of the stillborn infant, or equivalent examinations. (C)
   5) Chromosomal analysis. (C)
   Maternal factors
   6) Tests such as the indirect Coombs test for atypical antibodies against erythrocytes in cases with an undetermined antibody status. (B)
   7) Tests for antiphospholipid antibody, including lupus anticoagulant, anti-cardiolipin antibody, and anti-cardiolipin ß2GP1 antibody. (C)
   8) Tests for syphilis in undetermined cases. (B)
   9) Tests for parvovirus B19 or other TORCH infections. (C)
   10) Tests for glucose tolerance and thyroid function. (C)
   11) Tests for coagulation-fibrinolysis system. (C)
   12) Test for feto-maternal transfusion. (C)
3. Provide information regarding the risk of recurrence in siblings of IUFD cases with structural malformations and/or chromosomal aberrations at the request of the mother/family. (C)

4. Support the mother and family psychologically and emotionally with counseling and other forms of assistance. (B)

Chapter J. Others

CQ901: How should one respond when asked about the effects of car seatbelts during pregnancy?

Answer

1. Explain as follows.
   "Damage from car accidents is reduced if seatbelts are applied in an appropriate manner. The chest belt should pass between the breasts, and the waist belt should pass below the pubic bone; neither belt should cross the protruding abdomen."(A)

CQ902: How should female patients involved in multiple casualty incidents be treated?

Answer

1. Consider the possibility of a casualty being pregnant while performing triage and while treating and transporting female casualties. (B)
2. Try to find pregnant women using ultrasonography or a similar apparatus to detect the fetal cardiac activity if female casualties are not able to respond to questions during secondary triage. (C)
3. Tag pregnant patients who are suffering from a rupture of fetal membranes, genital bleeding, pain in the abdomen, and/or fetal death with a red card. (B)

CQ903: How should one behave after experiencing an incidental maternal mortality?

Answer

1. Notify the "accident investigation committee" of each hospital. (A)
2. Contact the central and prefectural offices of the Japan Association of Obstetricians & Gynecologists (JSOG) and report the incident in detail. (A)
3. Make every effort to obtain consent to perform an autopsy. (A)