

# Multiple pregnancy

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## 1 Introduction

Multiple pregnancy poses particular problems for women, their infants, and for their caregivers. Women are likely to experience the common, unpleasant symptoms of pregnancy, such as heartburn, backache, hemorrhoids, difficulty walking, and tiredness to a greater degree than women with a singleton pregnancy. They are more likely to suffer from anemia, hypertension, pre-eclampsia, preterm labor, and operative delivery. The increased risks to the babies include congenital malformations, monochorionicity (both babies sharing one placenta), poor fetal growth, preterm birth, and perinatal death. For the survivors, in the long term there is a greater risk of cerebral palsy.

## 2 Prenatal care

A wide range of options for regular antenatal attendance are practised, ranging from modified shared care between obstetrician and general practitioner to weekly visits from the 20th week of gestation onwards. There is no evidence to suggest that one pattern of prenatal care is

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better than another, because this important research question has never been properly addressed. Regular prenatal visits permit screening for hypertension and pre-eclampsia by careful determination of blood pressure, and, if elevated, checking for proteinuria. Care for women with a multiple pregnancy who develop hypertension may be particularly important, and should follow current treatment recommendations (see Chapter 15).

### **2.1 Advice and support**

Women with a multiple pregnancy need advice and support from caregivers to help them deal with the particular problems of multiple pregnancy and with the common, unpleasant symptoms of pregnancy, such as hemorrhoids, heartburn, and backache (see Chapter 13). They may be especially anxious about the pregnancy, the birth, and their ability to cope with the practical and financial demands of more than one new baby. Assisting women to find support, such as a special antenatal class for women with a multiple pregnancy or referring them to a multiple-birth support group, may help.

### **2.2 Nutrition**

Fetal demands for iron and folate are increased in multiple pregnancy and anemia is reported more frequently than in singleton pregnancies. Routine iron and folate supplementation is often advised from the beginning of the second trimester, although this has not been shown to improve the clinical outcome of the pregnancy (see Chapter 6).

### **2.3 Ultrasound**

If routine ultrasonography is not carried out, an ultrasound examination is indicated when multiple pregnancy is suspected. Routine early ultrasonography results in earlier detection of multiple pregnancies, the detection of mono-amniotic pregnancies (with greater risk), and the detection of some unsuspected congenital abnormalities. Earlier detection of multiple pregnancy has not been shown to improve fetal outcome.

The risk of neural tube defects, cardiac anomalies, and bowel atresias, have all been reported to be increased in twin pregnancies. Conjoined twins and twin reversed arterial perfusion sequence are rare anomalies that are found exclusively in multiple pregnancies. Early diagnosis of fetal anomaly enables appropriate counseling as to the care options available.

The prediction of amnionicity (number of amniotic sacs) and chorionicity (separate or joined placentas) by first-trimester ultrasound is possible, though its accuracy and the relevance to pregnancy outcome remains to be determined. In theory at least, knowledge of amnionicity and chorionicity may be helpful in a number of ways, such as in the differentiation of twin-to-twin transfusion syndrome from a twin pregnancy complicated by intra-uterine growth restriction, in management after a single fetal death, or where one of the twins has a major congenital malformation and selective termination is considered.

If twin-to-twin transfusion syndrome develops, several therapeutic options have been advocated. These include: non-steroidal anti-inflammatory drugs, repeated therapeutic amniocenteses, and techniques that interrupt the pathological placental circulation. The results of controlled trials of these therapies are awaited, although there has been minimal evidence to date that any of these improve infant outcome.

Poor fetal growth of one or more babies is a risk in a multiple pregnancy. No adequately controlled data are available on the value of regular ultrasound or umbilical artery Doppler for assessing fetal growth and well-being in multiple pregnancy.

### 3 Preterm birth

Preterm birth presents the greatest threat to infant survival. Counseling as to the signs and symptoms of preterm labor with advice to present to the hospital if they occur, together with a written information sheet, may be of value, although this approach has not been subjected to a controlled evaluation.

Prediction of preterm birth is difficult. Cervical assessment by digital examination or by ultrasonography has been reported to provide useful prediction of the risk of preterm birth. How frequent these assessments should be made is uncertain, and whether they are more beneficial than harmful is unknown.

Cervical fibronectin may prove to be useful in predicting which women will give birth preterm, although the main strength lies in its negative predictive value. Whether the measurement of fibronectin will be useful clinically to improve pregnancy outcome remains to be established by controlled trials.

Several prenatal treatments have been used in attempts to reduce the risk of preterm birth and its sequelae in women with multiple pregnancy. These include cervical cerclage, beta-mimetic agents, home

uterine-activity monitoring, and hospitalization for bed rest. All have been evaluated by controlled trials but, to date, none have proven to be of value in reducing the risk of preterm birth.

### 3.1 Cervical cerclage

In normal pregnancy, the uterine cervix is thought to assume a sphincter-like function to retain the contents of the uterus. A congenital or traumatically-acquired weakness of the cervix, or the unusual physiological circumstance of multiple pregnancy, are factors that may render the cervix incapable of performing this function as efficiently as usual. Belief in such 'incompetence' of the cervix is the basis for performing the operation of cervical cerclage.

The data available from controlled trials of cervical cerclage in twin pregnancy are too few to be clinically useful. They are compatible with both a large beneficial effect and with a large adverse effect of the operation. Cervical cerclage does affect other aspects of clinical care and carries some specific risks. It should not be adopted specifically for twin pregnancy outside the context of further controlled trials of sufficient size and quality.

### 3.2 Prophylactic betamimetic agents

Trials have been conducted with a number of oral betamimetic agents, including isoxuprine, ritodrine, salbutamol, and terbutaline, in various doses, for the prevention of preterm labor in women with multiple pregnancy. In spite of the diversity of agents and the varying doses used, the results are consistent. No beneficial effect of prophylactic betamimetic administration has been detected on preterm birth, low birthweight, or perinatal mortality. Although prophylactic betamimetic agents have not succeeded in postponing delivery or in improving fetal growth, the four trials that provide information on the incidence of respiratory distress syndrome suggest that the frequency of this adverse outcome may be significantly reduced. No such effect has been found with prophylactic betamimetics in singleton pregnancies, and it might be a chance finding.

In the light of the theoretical dangers of chronic fetal exposure to betamimetic agents, prophylactic administration of these drugs should only be considered in the context of well-controlled clinical trials.

### 3.3 Home uterine-activity monitoring

Trials of home uterine-activity monitoring in multiple pregnancy have been small, and not enough detail is available to evaluate the potential

sources of bias. There are suggestions that babies born to mothers using home uterine-activity monitoring for twin pregnancy may be less likely to weigh less than 1500 g, or to be admitted to a special care nursery. Because of the high potential for bias, these data must be viewed with caution. Home uterine-activity monitoring, if adopted at all, should not be adopted outside the context of adequately controlled trials.

### 3.4 Hospitalization in multiple pregnancy

Prolonged bed rest in multiple pregnancy, with the aim of increasing the duration of gestation, improving fetal growth, and decreasing perinatal mortality, has been advocated for many years. The general considerations about the use of bed rest (see Chapter 14), apply equally strongly to its use in multiple pregnancy, as the practice is not innocuous.

Hospitalization and bed-rest in multiple pregnancy was introduced into clinical practice without adequate evaluation and the policy has still not been fully evaluated. Only recently have a few trials been conducted and further controlled evaluations are necessary to clarify the effects of this intervention. More information is available from twin than from higher multiple pregnancies.

There is some suggestion from these trials that routine hospitalization of women with twin pregnancies may result in a decreased risk of maternal hypertension, but a positive impact on more relevant outcomes has been negligible. Indeed the data suggest that routine hospitalization may have adverse effects. The risk of very preterm birth (less than 34 weeks gestation) and very low-birthweight babies was *increased* by routine hospitalization in these trials. No differences have been detected in the incidence of depressed Apgar score, admission to special care nurseries, or perinatal mortality.

Some obstetricians have suggested that hospitalization for bed rest in twin pregnancies should be applied only for women deemed to be at higher than average risk of preterm birth. Although this more conservative advice is possibly justified, there is remarkably little good evidence to support it. Only one such selective policy has been evaluated in a randomized trial. Comparison between the hospitalized and control groups of women with early cervical dilatation failed to show any benefits on the risk of preterm birth, perinatal mortality, fetal growth, or other neonatal outcomes. There is no basis for widespread adoption of the policy.

Only one trial of bed-rest in triplet pregnancies has been published. The results of this trial suggest that a number of adverse outcomes,

including preterm birth, perinatal death, and low birthweight, can be reduced by routine hospitalization of women with a triplet pregnancy. The trial was small; the findings were compatible with chance; and further research is required.

## 4 Delivery

Virtually no data from controlled trials are available to help determine the choice between vaginal birth and cesarean section for women with multiple pregnancy. A single trial has assessed the effect of cesarean section for delivery when the second twin was in a non-vertex presentation. As would be expected, maternal febrile morbidity and need for general anesthesia was increased with cesarean section. No offsetting advantages in terms of decreased fetal or neonatal morbidity or mortality were found.

## 5 Conclusions

Additional support may be needed to help women with the emotional, practical, and financial demands of pregnancy and planning for more than one baby.

Routine early ultrasonography results in early diagnosis, detection of fetal abnormalities, and can determine amnionity and chorionity. Whether this improves the outcome for the mother or infant is unknown. Regular antenatal attendance permits screening for hypertension. Iron or folate supplementation may help to prevent anemia.

Prediction of preterm birth is difficult and the role of cervical assessment and clinical use of fibronectin remains to be evaluated by controlled trials. Therapies that aim to reduce the risk of preterm birth have not been shown to be effective.

There is currently no sound evidence to support the practice of routine bed-rest in hospital for women with a twin pregnancy; indeed the evidence suggests that this may be harmful. Whether or not such a policy would be justified in women at higher risk of preterm labor, such as those with triplet pregnancy or with early cervical dilatation, remains to be established.

The use of cervical cerclage, oral betamimetics, or home uterine-monitoring, for women with multiple pregnancy cannot be justified outside the context of adequately controlled trials. The indications for cesarean delivery with multiple pregnancy have not been established.

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