Antenatal care

common issues facing GPs in shared care

The general practitioner who undertakes shared care is faced with numerous issues throughout the pregnancy. They are discussed here in a roughly chronological order, from prepregnancy counselling to post-term pregnancy.

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Prepregnancy counselling

What can you tell a couple who come to see you planning a pregnancy? There are several issues to cover.

Folic acid

Folic acid reduces the risk of having a baby with a neural tube defect (evidence from well conducted randomised controlled trials). High risk women, such as those who have been previously affected, have a family history, have diabetes or are on antiepileptic medication, should take 5 mg/day for at least one month before pregnancy. The evidence for a similar effect of 0.5 mg/day of folic acid on low risk women comes from studies in countries that may have a lower background folate intake and from an estimate of the effect of folate in non-randomised trials. I continue to recommend the higher dose because I think the best evidence still relates to the higher doses (personal opinion).

Multivitamins

The additional intake of multivitamin supplements (at least two water-soluble and two fat-soluble

IN SUMMARY

- **Remember to remind women about folic acid intake when they are planning a pregnancy or during early pregnancy.**
- **Give practical antismoking advice and support, especially to those who are able to give up early in pregnancy.**
- **For clinically stable women with first trimester bleeding, measure serial hCG levels if before six weeks' gestation and scan with ultrasound if after six weeks.**
- **Women with first-time hypertension in pregnancy need a thorough assessment including fetal wellbeing; this is often best done in a day-stay setting.**
- **Routine induction of labour in the low risk pregnancy between 10 and 14 days past the due date will benefit both mother (reduced risk of caesarean section) and baby (reduced risk of death).**

Monitoring the pregnancy

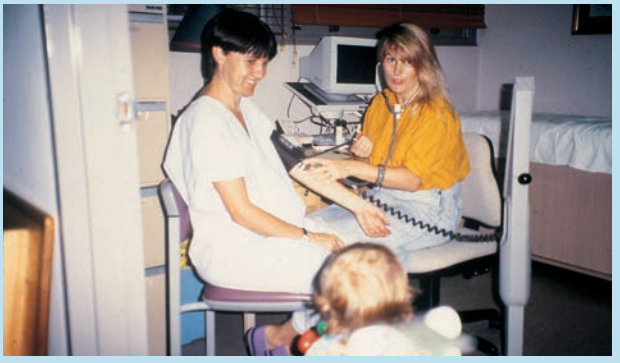

Figure 1. Taking blood pressure in a family-centred environment.

Figure 2. Palpating for the fetal size and presentation.

vitamins but usually more) may confer benefits such as a reduction in: vomiting in the first trimester, cleft lip, limb reduction defects, urinary tract defects and childhood brain tumours.[1] However, these data come from retrospective case–control studies that need confirmation in randomised controlled studies under Australian conditions before they can be generally advised. Importantly, the studies have been too small to detect possible harms.

Rubella vaccination

Nowadays all Australian children are vaccinated against rubella. This not only reduces the individual's risk if exposed to the disease but also increases the 'herd immunity', thereby reducing the incidence of the disease and the chances of exposure. Nevertheless, women who may not have been vaccinated (for example, new migrants) should be tested, and vaccinated (Ervevax, Meruvax II) if they are not already immune. Note that pregnancy should be excluded before the vaccine is given, and the woman should be advised not to become pregnant within three months after the vaccination.

Women who have been vaccinated but have low levels of circulating antibody are at risk of reinfection. Fortunately this seems to be associated with a much smaller risk of the congenital rubella syndrome than is primary infection.[2] Some 5% of women will not develop high levels of circulating antibody in spite of repeated episodes of vaccination. These women will, however, have protection from congenital rubella syndrome and do not need repeated vaccinations.

Exposure to x-rays and solvents

Evidence from prospective cohort studies of miscarriage suggests that both partners should avoid x-rays of the genital area (including lumbar spine x-rays) and exposure to oil paints, glues and oven cleaners during the six months leading up to the pregnancy.[3] However, these exposures can account for only a small number of the miscarriages that occur.

Genetic screening

If there are genetic diseases in the family, such as thalassaemias, cystic fibrosis, haemophilias or Tay–Sachs disease, consider carrier testing.

Reducing smoking and other substance abuse

Antismoking interventions are strongly indicated before and during pregnancy. Women who give up smoking at the beginning of pregnancy are particularly in need of support because of the high relapse rate. Partners need support too, to stop smoking or at least smoke outside so as not to expose the mother or fetus to the evil of passive smoking. Useful tools are the 'Quit for Life' information package as well as support from family and friends.

The benefits of reduced smoking rates extend into the postnatal period and the rest of life. Drug and alcohol programs are available for families who are involved in other types of substance abuse.

Chronic conditions and past obstetric problems

Space does not permit a discussion of the specialised prepregnancy counselling for women who have chronic conditions that, of themselves or by the nature of their treatment, impact on planning for pregnancy. Women with a complex past obstetric history involving fetal loss, damage or abnormality can also be referred for specific counselling.

Vaginal bleeding in early pregnancy

One of the most common problems in early pregnancy is vaginal bleeding. At least 10% of normal pregnancies will have an episode and about 15% of recognised pregnancies will miscarry, the rate being higher with advancing age. If the bleeding is light or moderate and the pain mild or absent, the interest is in excluding an ectopic pregnancy and predicting a

viable ongoing pregnancy (see the flowchart on page 85).

Before about six weeks' gestation, an ultrasound scan is generally unhelpful, and I would measure serial quantitative beta human chorionic gonadotrophin (hCG) levels, which should double every two days. When the level of hCG is greater than 1500 IU/L, a gestational sac should be visible in the uterus on transvaginal ultrasound scanning. If the hCG level is rising too slowly, then a non-viable pregnancy is diagnosed, which may be in the tube or in the uterus. Specialist referral is indicated.

Between six and eight weeks, the ultrasound can effectively exclude an ectopic pregnancy by finding an intrauterine pregnancy. After eight weeks, a normal ultrasound scan is very reassuring because the miscarriage rate after this is around 3% only.

Since almost all miscarriages are due to an error in the formation of the fetus, rest has no part to play in the management of threatened miscarriage.

Pay particular attention if there is bleeding, especially if only a small amount, during the interval 18 to 24 weeks. This can be a sign of cervical weakness and warrants a speculum or vaginal examination to establish or exclude this diagnosis, in addition to an assessment of the fetal heart rate to show the baby is still alive.

Prenatal testing

Whatever our own attitude to prenatal testing, we are obliged to share with our patients information about what is available for screening. GPs are in the ideal position to talk about the options, which include anomaly scanning for structural defects, risk assessment tools such as nuchal translucency measurement or triple test serum screening, and invasive tests for a definitive diagnosis.

Sport and exercise in pregnancy

During early pregnancy, women often ask about continuing sport and exercise through the pregnancy. The one sport clearly contraindicated is scuba diving, especially beyond 30 m. Experiments with pregnant sheep taken to significant depths have shown serious problems in the fetuses of these animals. Sports that require balance and those in which injury could result are also relatively contraindicated.

Physical activity, in the form of aerobic sessions, has been extensively studied, and good outcomes, in terms of birthweight and delivery at term, were found among women who were participating in one to four aerobic sessions a week at 25 weeks' gestation. An attempt to evaluate exercise further with a randomised trial of strenuous exercise versus reduced exercise had problems with recruitment and compliance with the reduction in exercise required by the study.

Concerns about high temperatures have been raised after animal experiments in which pregnant rats heated to 40°C during the first trimester had offspring with birth defects. This kind of raising of core temperature is most likely to happen with an infectious illness. It is unlikely to happen with exercise or even sauna if there is adequate hydration and a sensible approach is taken.

Dietary supplements

Although there is a lot of advice about what should and should not be eaten during pregnancy, attempts to improve pregnancy outcome by supplements have been quite unsuccessful. Protein, calorie, iron and calcium supplements have all been the subjects of negative randomised trials. A review of clinical trials of routine iron supplementation during pregnancy in developed countries concluded there was no benefit in terms of birthweight, length of gestation, and maternal and infant morbidity and mortality. Indeed, harm may be done by increased red blood cell size and blood viscosity that reduce uteroplacental blood flow. Iron supplementation should be guided by the results of screening blood counts at booking and at 28 weeks.

Abandoning useless practices

Figure 3. Looking at the urine. Just as we may laugh at such a practice now, because it tells us nothing, so should we continue to monitor the advice we give, and abandon useless practices – such as, perhaps, dietary supplements (other than folic acid) and frequent weighing of the mother during pregnancy.

Weight gain in pregnancy

Although women are frequently weighed during pregnancy, there is no evidence that this practice alone improves outcomes. There are associations between low prepregnancy weight, low maternal weight gain and low birthweight in babies, but there are no useful interventions to change this outcome. I believe weighing does more harm than good, by giving the (wrong) message that it matters!

Hyperemesis

Hyperemesis gravidarum is a common problem that is worse with a multiple pregnancy and possibly with a female fetus.[4] Treatment is symptomatic, with vitamin B6, reassurance and sometimes antiemetics such as metoclopromide

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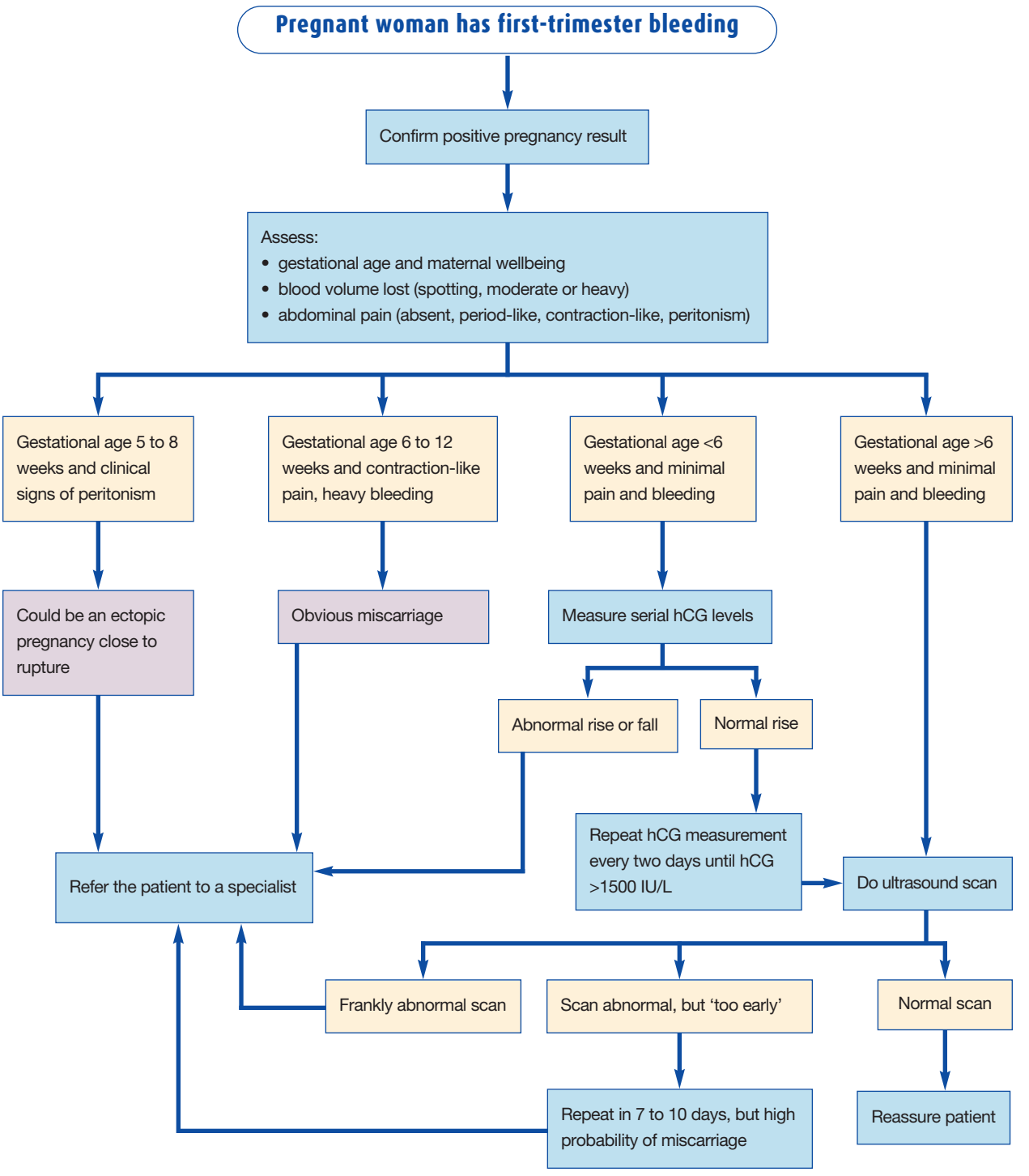
Investigating first-trimester bleeding



(Maxolon, Pramin). An ultrasound scan is useful to exclude twins and trophoblastic disease. In severe cases, admission to hospital for intravenous hydration and treatment with parenteral antiemetics always helps. In difficult cases we have had some success with chlorpromazine (Largactil) 25 mg three times a day.

Travel in pregnancy

Patients often ask about travel during pregnancy; invariably it is about aeroplane travel, although motor vehicle travel is far more dangerous. The main issues are the length of the time spent in the air on long distance flights and the (often) exotic destinations, where medical care may be hard to find, especially if there is a language barrier. Generally, international flights are fine up to about 32 weeks' gestation and domestic flights are fine at any time. Remember to advise walking about the plane every two hours and drinking plenty of nonalcoholic fluids.

Sex and pregnancy

There is no evidence that sex during pregnancy does any harm. Many women report a heightened libido, especially during the middle of the pregnancy, and it can be a time of great closeness and intimacy before the invasion of the baby. Towards the end of pregnancy there may be mechanical difficulties, but the desire usually remains. There is no proof that frequent intercourse brings on labour.

After the birth is a different story. During the early puerperium, follicle stimulating hormone production is suppressed and the serum oestrogen levels approach those of the menopause. This usually leads to a loss of libido, atrophy of the vaginal mucosa and vaginal dryness, all of which contribute to a natural reluctance on the part of the mother to engage in penetrative intercourse. Meanwhile, her partner may be feeling a little put out by the new arrival and may be used to being reassured in the relationship by a healthy sex life. This can lead to misunderstandings and recriminations. An understanding of the physiological problems can help, as well as imaginative forms of intercourse that do not involve vaginal penetration. The good news is that these problems resolve about the time of the first menstrual ovulation – so the couple need to be aware that about the first time a woman feels like sex after childbirth is when she may get pregnant if not using some form of contraception.

Sleep disturbance

Perceived lack of restful sleep is a common problem from the early months, with nocturia, through to the later stages of pregnancy, when changing sleeping

position is a major undertaking. Unfortunately, there is little that can be done. Even such seemingly harmless solutions as herbal teas only increase the desire to micturate, and the problem is usually waking several times and then having difficulty going back to sleep, rather than the inability to go to sleep in the first place. Explanation of the physiology, recommending naps during the day and empathic listening are all useful options. There is no evidence that voluntary sleeping on the back does harm, nor has anyone been unable to push her baby out due to sleep deprivation.

Preterm contractions

All women have uterine contractions from the second trimester through to term; however, only a few will have preterm labour and delivery. The contractions early in pregnancy are usually weak, short, infrequent and irregular in timing compared with true labour. Studies done on twin pregnancies have suggested the guideline that if a woman has more than four contractions in an hour that is unrelieved by rest, she should be assessed at the hospital. The corollary is if the contractions are fewer than four per hour, this is not significant and is probably normal. A similar issue occurs with fetal movements, where a minimum of 10 movements per 12 hours has been shown to be associated with good fetal outcomes.

Hypertensive disorders of pregnancy

The detection of hypertension is arguably the most important function of antenatal care. About 7 to 10% of pregnancies are affected. The disease can be understood as a relative ischaemia of the placenta, due to inadequate invasion of the spiral arterioles by trophoblast in the first and early second trimester, which 'tells' the mother to increase perfusion to the placenta in an effort to overcome the block. The fetus may also compensate by reducing its demands in the form of growth restriction. In practice, the outcome of treatment is to optimise the fetal outcome without compromising the mother.

The Australasian Society for the Study of Hypertension in Pregnancy (ASSHP) has defined hypertension as blood pressure greater than 140/90 mmHg and classified the hypertensive disorders into:[5]

- severe pre-eclampsia – onset after 20 weeks of blood pressure greater than 170/110 mmHg and/or associated features such as renal impairment, thrombocytopenia, abnormal liver transaminases, persistent headache, epigastric

tenderness or fetal compromise
- mild pre-eclampsia (also known as gestational hypertension) – onset after 20 weeks of elevated blood pressure up to 170/110 mmHg in the absence of associated features
- chronic hypertension – which may be essential or secondary
- chronic hypertension with superimposed pre-eclampsia.

In practice, a woman not known to be hypertensive who has an antenatal visit at which the blood pressure is found to be greater than 140/90 mmHg requires assessment. If there are features in the history, examination or urinalysis that suggest severe pre-eclampsia, immediate admission to hospital should be arranged. If not, then further evaluation is necessary to establish the diagnosis and assess the severity of the condition.

To be significant, the elevation in blood pressure must persist over six hours or more. A convenient method of further assessment is admission to a day-stay unit at which the blood pressure will be measured hourly for four hours, platelets, uric acid, creatinine and liver function tests will be checked, urinalysis performed and fetal assessment undertaken by ultrasound scan for growth and fetal wellbeing. Only after this level of assessment can the woman be correctly classified as not having hypertension or having gestational hypertension or severe pre-eclampsia.

Breech presentation

Breech presentation should be considered at about 35 to 37 weeks' gestation. Any baby that is not definitely head down (a useful clue is to ask the mother what she thinks and where she feels the baby kicking) should be checked.

A randomised controlled trial showed that spontaneous version can be encouraged by the use of moxibustion (a form of acupuncture) at 35 to 37 weeks.[6]

External cephalic version is done at 37 weeks in a facility with ultrasound scanning and fetal monitoring, using tocolysis to relax the uterine tone. Overall success rates are 45%, with 60% in parous women and 30% in nulliparous women. Complication rates are low; perinatal death due to the procedure occurs in about one in 10,000 procedures and the need for emergency same-day delivery in about one in several hundred. Overall, in breech presentation it is probably safer to have an external cephalic version than not to have one (observational studies and results of randomised controlled trials).

Post-term pregnancy

For practical purposes, post-term pregnancy is now defined as more than 41 weeks. A meta-analysis of 11 randomised trials concluded that there were maternal and fetal benefits in being induced between 10 and 14 days after the due date.

Since many women are opposed to induction of labour it would be ideal if strategies could be found that prevent post-term pregnancy. An ultrasound scan before 20 weeks has the benefit of establishing the dates, especially in women with uncertain date of last menstrual period or long cycles, thus reducing the number who are incorrectly thought to have reached 42 weeks. Weekly vaginal examination with stripping of the membranes from the lower segment of the uterus also appears to reduce the number of women who get to more than 41 weeks; however, the randomised trials have been small studies and have not shown any benefit in perinatal outcome. At present this cannot be recommended because it is uncomfortable and many women would see it as intrusive.

Conclusion

Providing antenatal care in general practice can be a very satisfying activity. The general practitioner has a valuable role in considering the issues mentioned above and discussing them with the pregnant patient. MT

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