Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

CLINICAL PRACTICE GUIDELINE

THE MANAGEMENT OF

SECOND TRIMESTER MISCARRIAGE

Institute of Obstetricians and Gynaecologists,

Royal College of Physicians of Ireland

and

Directorate of Strategy and Clinical Programmes,

Health Service Executive

Version: 1.0 Publication date: July 2014

Guideline No: 29 Revision date: July 2017

Table of Contents

1. Key Recommendations

1. A full clinical assessment is recommended as part of the evaluation of women diagnosed or at risk of miscarriage or following the diagnosis of miscarriage.
2. The Irish Maternity Emergency Warning System (IMEWS) should be used for the monitoring of all pregnant women who are admitted to hospital in the second trimester.
3. Real time ultrasonography by a trained ultrasonographer may be necessary for the accurate diagnosis of miscarriage and may need to be repeated in selected cases.
4. Laboratory investigations may be required to assess maternal well-being and to rule out any risk factor that may have contributed to the miscarriage.
5. If the cervix is closed and the membranes are intact a combination of mifepristone and a prostaglandin preparation should be considered as the first-line agents for induction in second trimester miscarriage. However, particular caution should be taken if a woman has had a previous caesarean section or uterine surgery.
6. Women with evidence of chorioamnionitis should be commenced on broad spectrum intravenous antibiotics without delay.
7. In the second trimester of pregnancy delivery should be considered for women with chorioamnionitis irrespective of fetal viability.
8. The cord, membranes and placenta should be retained for pathological examination in cases of late miscarriage.
9. Fetal cytogenetic analysis, where available, should be performed in all cases of late miscarriage. This may be best performed by sampling placental tissue.
10. Supportive care, in line with the hospital's resources for bereavement care, should be made available to all bereaved couples after a second trimester miscarriage.
11. Standardised checklists should be used to ensure that all appropriate actions are implemented. Actions should be recorded.
12. A follow-up appointment with a senior obstetrician should be arranged for women following a second trimester miscarriage.

2. Purpose and Scope

The purpose of this guideline is to improve the management of women with a second trimester miscarriage, defined as a loss after the 12th and before the 24th completed week of pregnancy. It reviews the management of spontaneous miscarriage and is also relevant to situations where maternal well-being is compromised and delivery is indicated in the second trimester before 24 weeks gestation.

The guideline is intended to be primarily used by healthcare personnel working in the area of early pregnancy care which includes obstetricians, anaesthetists, microbiologists, midwives, midwife-sonographers, nurses, radiographers, radiologists and general practitioners. It should be read in conjunction with the National Clinical Practice Guidelines on Ultrasound Diagnosis of Early Pregnancy Miscarriage (Guideline No. 1), Investigation and Management of Late Intrauterine Fetal Death and Stillbirth (Guideline No. 4), Preterm Prelabour Rupture of Membranes (Guideline No. 24) and the Irish Maternity Early Warning System (Guideline No. 25).

This guideline is intended to assist clinical judgement and not to replace it. In individual cases a healthcare professional may, after careful consideration, decide not to follow the guideline if it is deemed to be in the best interest of the woman.

3. Background and Introduction

Spontaneous miscarriage is the commonest complication of pregnancy and occurs in about one fifth of clinical pregnancies (Michels and Tiu, 2007). Miscarriage occurs in approximately one fifth of clinical pregnancies equating to approximately 14,000 miscarriages per annum in Ireland (Poulose et al, 2006). The majority of miscarriages occur within the first 12 completed weeks (first trimester) of the pregnancy. The miscarriage rate is reduced to approximately 1% if a live fetus has been identified by ultrasonography at 10 weeks gestation in a normal population (Tong et al, 2008). Miscarriages occurring in the second trimester of pregnancy are uncommon and often unexpected. The incidence of miscarriage in the second trimester varies depending on the gestational age in weeks that is used in definitions and depending on whether the pregnancy has been dated and evaluated using ultrasound. In low risk women the risk of miscarriage in the second trimester is approximately 0.5% (Westin et al, 2007).

4. Methodology

Medline and the Cochrane Database of Systematic Reviews were searched using the terms 'miscarriage', 'spontaneous abortion', 'second trimester', 'uterine evacuation' and 'prostaglandin (misoprostol)'. Searches were limited to humans and restricted to the titles of English language articles published between January 1993 and December 2013. Relevant meta-analyses, systematic reviews, intervention and observational studies were also reviewed.

The principal guideline developers were Dr Nadine Farah and Professor Michael Turner (Coombe Women and Infants University Hospital). The guideline was peer-reviewed by Dr Anne Bergin (Midwifery), Ms Mary Brosnan (NMH), Ms Helen Byrne (HSE), Dr Brian Cleary (Pharmacy), Ms Margaret Coohill (HSE), Dr Sam Coulter Smith (Rotunda), Dr Una Fahy (Limerick), Ms Mary Flynn (Midwifery), Dr Chris Fitzpatrick (Coombe), Dr Geraldine Gaffney (Galway), Dr Rhona Mahony (NMH), Andrea McGrail (Midwifery), Ms Deirdre Naughton (Midwifery), Dr Meabh Ni Bhuinneain (Mayo) Dr Keelin O'Donoghue (Cork), Deirdre Pierce McDonnell (Miscarriage Association of Ireland), Dr Michael Robson (NMH), Dr Sharon Sheehan (Coombe), Ms Sheila Sugrue (Midwifery), Ms Anna Maria Verling (Midwifery).

5. Clinical guidelines

5.1 Terminology

A second trimester miscarriage may be defined as a pregnancy loss after the 12th and before the 24th completed week of pregnancy. Women feel sensitive about the language used to describe pregnancy loss. Use of words like "abortion" can sometimes be upsetting to women at this vulnerable time. Discussion and documentation of pregnancy loss should be worded appropriately.

5.2 Causes of second trimester miscarriage

A second trimester pregnancy loss may be caused by fetal structural abnormalities, maternal uterine abnormalities and cervical insufficiency or incompetence (Lin et al 2002). Many studies have shown associations between pregnancy loss after 20 weeks gestation and Factor V Leidin mutation, protein S deficiency and the prothrombin G20210A mutation (Rey et al, 2003). Antiphospholipid antibodies can cause placental thrombosis resulting in an increased risk of second and third trimester pregnancy loss

(Wilson et al, 1999). Chromosomal abnormalities also cause pregnancy loss in the second trimester.

Infection has been implicated in 10-25% of second trimester pregnancy losses (Goldenberg et al 2003). Many infectious agents have been suggested, including bacteria, spirochetes, protozoa, viruses and fungi (Heller et al, 2003). Bacterial vaginosis has been associated with second trimester pregnancy loss and treating it may reduce risk of late miscarriage in women with a history of preterm delivery (Hay et al, 2004; McDonald et al, 2007; Brocklehurst et al 2013).

Establishing a cause and effect relationship may sometimes be difficult. Causation is well established for chromosomal and fetal structural problems. However, depending on how extensive the woman is investigated and depending on the resources available for investigation, the cause of second trimester loss may remain unexplained.

5.3 Clinical assessment

History

The assessment of a woman with suspected miscarriage in the second trimester involves taking a thorough history, physical examination and investigation. In some circumstances, the woman may be asymptomatic and the diagnosis is made unexpectedly at the time of a routine ultrasound examination. The woman may be presenting to the maternity services for the first time and previous details or investigations may not be immediately available.

In the history, a common presentation is vaginal bleeding or abdominal pains which are often intermittent in nature. There may be a history of ruptured membranes or the passage of the products of conception, particularly later in the second trimester. Attention should be paid to a history of a vaginal discharge and whether it is offensive or not. However, the presenting symptoms can be subtle and may sometimes reflect an underlying associated medical disorder or complication such as infection. A past history of previous pregnancy loss, as well as a previous history of cervical surgery, should be recorded.

Examination

Physical examination should include the woman's vital signs on presentation. If the woman is admitted the baseline vital signs should be entered on the Irish Maternity Early Warning System (IMEWS) chart (Appendix 1). The physical examination should include a careful abdominal examination recording if there is any tenderness and the fundal height of the uterus. In the absence of ruptured membranes a gentle vaginal examination should be performed to assess the cervix and the extent of any vaginal bleeding. If the cervix is dilated particular attention should be paid to avoid rupturing the membranes or precipitating ascending infection. At the same time, any protrusion of uterine contents through the internal cervical os should be recorded.

If there is no doubt that the membranes are ruptured a vaginal examination should be avoided to minimise the risk of ascending infection. If there is uncertainty about whether the membranes have ruptured, or not, a sterile speculum examination should also be performed. Pooling of amniotic fluid may be evident in the posterior vaginal fornix. (National Clinical Guideline Number 24). Ultrasound examination demonstrating oligohydramnios may also be useful in helping to support the diagnosis of spontaneous rupture of the membranes. However, a normal amniotic fluid index does not exclude the diagnosis of ruptured membranes. If a vaginal discharge is noted a swab should be sent for microbiological culture and sensitivity. If the cervix needs to be assessed with a view to induction vaginal examination in the presence of ruptured membranes should be deferred until induction so that the examination – delivery interval is minimised.

Investigations

Ultrasound examination

If the woman is not actively miscarrying, an ultrasound out of hours by the obstetrician on duty may be necessary. The examination should include checking the fetal heart activity, presentation, liquor volume and placental site. However, a repeat ultrasound by an appropriately trained ultrasonographer may be required, for example, to confirm fetal demise or a fetal structural abnormality. Depending on local resources this service may or may not be available outside normal working hours.

Laboratory Tests

Laboratory tests are necessary to assess maternal wellbeing and to determine the cause of the miscarriage. These investigations are similar to the investigations carried out after a late pregnancy loss (National Clinical Guideline Number 4).

* *Full blood count*

A full blood count may assist in the detection of maternal infection. However allowance should be made for an increase in the white cell count in pregnancy. (Abbassi-Ghavanti M, et al, 2009; Keski-Nisula L, et al, 1995).

* *Maternal coagulation testing*

Testing maternal coagulation and plasma fibrinogen are not indicated to find a cause for the miscarriage. However, as maternal sepsis, placental abruption and pre-eclampsia are all possible causes of fetal death the possibility of maternal coagulopathy must be considered.

* *Blood group and antibody screen*

If it is not already known, the woman's blood group should be established and the national guidelines on anti-D immunoglobulin administration followed. A blood group and antibody screen should be performed to exclude haemolytic disease due to maternal sensitisation to red cell antigens.

* *Kleihauer-Betke test*

Irrespective of Rhesus status, a Kleihauer-Betke test to detect fetomaternal haemorrhage may be considered (preferably before delivery) following the diagnosis of a second trimester miscarriage especially if there has been trauma to the maternal abdomen.

* *C-reactive protein*

If infection is suspected, the role of inflammatory markers is uncertain. There is a variation in the literature regarding the accuracy of the laboratory tests of leucocytosis and raised C-reactive protein in the prediction of chorioamnionitis. The sensitivities and false positive rates for leucocytosis in the detection of clinical chorioamnionitis range from 29% to 47% and 5% to 18% respectively (Romem and Artal, 1984; Ismail, 1985). The specificity of C-reactive protein is 38% to 55% (Watts, 1993; Ismail, 1985; Kurki, 1990). As with all haematological indices, comparison with a previous measurement, such as that taken on the first antenatal visit or on admission, may be more informative.

* *Maternal microbiology*

Infectious and microbiological investigation should be performed where infection is suspected as aetiology (maternal fever, abnormal liquor, flu-like symptoms, and prolonged rupture of membranes). Tests to be performed include maternal blood cultures, mid-stream urine analysis, vaginal and cervical swabs.

* *Renal Function and Liver Function Tests*

Abnormal renal function is an indicator of possible APLA Syndrome, which is associated with a significant increase in fetal morbidity and mortality. Abnormalities in liver function are also a marker for viral hepatitis, cytomegalovirus, and toxoplasmosis. Abnormal liver function has also been associated with acute fatty liver of pregnancy and HELLP syndrome (Haemolysis, Elevated Liver function, Low Platelets).

Cervical cerclage

This guideline does not address the use of cervical cerclage either pre pregnancy or during early pregnancy to prevent second trimester miscarriage (Alfirevic et al, 2012). However, the issue of "rescue" cerclage may arise in individual cases where the cervix has dilated and there is prolapse of the gestational sac. Emergency cervical cerclage has recently been well reviewed (Abbott et al, 2012, Namouuz et al, 2013). One RCT evaluated identified rescue cerclage and bed rest against bed rest alone (Althuisus et al, 2003). Only 23 women, 16 singleton and 7 twin pregnancies, were studied at a mean of 22-23 weeks gestation. No details were given of the degree of cervical dilatation, chorioamnionitis or neonatal morbidity. The rescue cerclage was associated with a significant delay in delivery by an average of four weeks. However, a review concluded that there is only limited data to support an associated improvement with rescue cerclage in neonatal mortality or morbidity (Abbott et al, 2012). The review found no clear data demonstrating the benefits of genital tract screening for infection before rescue cerclage (Abbott et al, 2012).

A more recent literature review in which transvaginal emergency cerclage was performed identified 34 studies of women with a dilated cervix in the second trimester of pregnancy (Namouz et al, 2013). Predictors of poor outcome were prolapsed membranes, evidence of intra-amniotic or systematic infection, symptomatic presentation, cervical dilatation > 3cms, or cerclage after 22 weeks gestation.

Predictors of adverse outcomes appeared to be associated with evidence of inflammation or infection. This review also found that cerclage was associated with a longer latency period and better clinical outcomes when compared with bed rest in well selected patients however, there were wide variations in the study populations. The review concluded that there was a need for prospective studies and randomised trials.

We recommend that the decision to undertake a rescue cerclage should only be taken after lengthy consideration by a senior obstetrician. As many of these cases occur at the limits of fetal variability we recommend that the consideration given to performing a rescue cerclage should include a discussion with the neonatal team as well as the couple.

5.4 Delivery

If a miscarriage occurs, the diagnosis should be discussed sympathetically in private with the woman and the accompanying person of her choice. The management options should be outlined and a care plan documented in the clinical notes. If the woman is alone when presenting to the maternity service she should be given the option of summoning personal support. Her views on the proposed management should be sought and discussed in full. It should also be explained that it may be necessary to modify the planned management depending on how the clinical circumstances evolve.

The management may involve awaiting spontaneous miscarriage or planned induction. In cases of second trimester miscarriage where there is evidence of maternal compromise such as sepsis, fulminating pre-eclampsia or massive placental abruption, immediate steps towards delivery may be required. However, a more expectant approach can be discussed if the woman's condition is stable.

If the woman is not immediately admitted to hospital after the diagnosis of miscarriage, it is preferable that she is accompanied home and that she is not left unaccompanied subsequently at home. She should also be given instructions to come back in to hospital if she has any concerns about her well-being. A follow-up plan should be agreed and understood.

If the woman is admitted to hospital the ideal setting is a ward where there are no women with uncomplicated pregnancies or healthy babies. As continuity of care is recommended, an individual midwife/nurse should be assigned to the woman, if possible. The woman should be reviewed medically and the care plan discussed with the couple. Appropriate support services should be contacted in relation to the woman's admission including members of the hospital bereavement and loss team (personnel involved will vary locally). Pastoral care should be offered. Unnecessary disturbances should be minimised during the woman's time on the ward. The woman should be closely supervised for changes in her clinical circumstances or for evidence of deterioration in her vital signs. Whatever care plan has been decided, it is important that the couple's wishes are taken into account.

Assessment of risk of infection

In women who have miscarried the cervix may remain closed and the amniotic sac may remain intact. In the absence of intervention the risk of ascending intrauterine infection is low. In women where the internal cervical os has dilated, where the membranes have ruptured or where the amniotic sac or its contents are protruding through the cervix, the risk of ascending intrauterine infection increases. In such circumstances, the woman should be closely monitored clinically for any signs of infection and, if not already commenced, the IMEWS observation charts should be used.

A vaginal swab should be sent for culture and sensitivity. Depending on the clinical presentation other microbiological investigations should be sent and their results followed up. The local microbiological and medication guidelines should be followed and if an infection is suspected appropriate doses of intravenous bactericidal antibodies should be administered as soon as possible. A separate guideline for antibiotic prescribing is under development.

If fetal demise has already occurred and the woman is haemodynamically stable arrangements should be made to induce delivery. The induction-delivery interval should be minimised to prevent systemic infection developing. If the fetal heart is present it may still be necessary to induce delivery irrespective of gestational age

particularly if there is evidence of infection developing. This is more likely to occur when the cervix is dilated, if the membranes are ruptured or if the uterine contents have protruded through the cervix.

Expectant management

More than 85% of women with an intrauterine fetal death (IUFD) deliver spontaneously within three weeks of diagnosis. If the woman is physically well with a closed cervix and intact membranes and if there is no evidence of pre-eclampsia, infection or bleeding, the risk of expectant management is low (NICE, 2008). However, there is a 10% chance of maternal coagulopathy four weeks from the date of fetal death (Parasnis *et al,* 1992).

Medical management

A combination of mifepristone and a prostaglandin is recommended as the first-line pharmacological intervention for induction of labour. One report found that the combined use of mifepristone and misoprostol was not only safe but also had an average time-to-delivery interval less than other induction regimes (Wagaarachchi et al, 2002). A single 200mg dose of mifepristone is appropriate for induction after IUFD (Clinical Practice Guideline Number 4).

Misoprostol is a synthetic prostaglandin E analogue marketed as an oral preparation for the prevention and treatment of gastrointestinal damage induced by nonsteriodal anti-inflammatory drugs (NSAIDS) (Allen and O'Brien, 2009). It is used widely in obstetrics and gynaecology off-label (Elati et al, 2009). Despite extensive research it has only slowly been incorporated into clinical practice including the management of second trimester miscarriage (Weeks et al, 2005). Misoprostol in the second trimester of pregnancy is as effective as other prostaglandin preparations (Dodd and Crowther, 2010). Its advantages over other synthetic prostaglandin analogues are its low cost, long shelf-life, lack of need for refrigeration and worldwide availability (Allen and O'Brien, 2009). Misoprostol effects are dose dependant and include cervical softening and dilation, uterine contractions, nausea, vomiting, diarrhoea, fever and chills. Although fever is a side effect of misoprostol the woman should still be closely monitored clinically for any signs of infection.

There are a wide variety of clinically effective misoprostol regimens for the induction of labour in the second trimester of pregnancy. Comparing the vaginal, sublingual and oral routes, sublingual misoprostol has the shortest induction to expulsion interval but has more side effects (Elhassan et al, 2008; Chittacharoen et al, 2003). The required amount of misoprostol not only decreases with increasing gestational age but has also been found to be lower in women where the fetus has died in utero (Srisomboon et al 1998; Gomez et al, 2007).

If the cervix is closed and the membranes are intact vaginal misoprostol is recommended in view of lower side-effect profile. From 13-17 weeks, 200mcg vaginal misoprostol is required 6 hourly (four doses maximum). 100mcg of vaginal misoprostol 6 hourly (four doses maximum) is recommended for gestational ages between 18 – 24 weeks. If the first dose does not produce effective contractions the second dose can be doubled (Gomez et al 2007). Due to the risk of uterine rupture it is recommended that women with a scarred uterus should receive half the dose of misoprostol. Care should be taken when considering increasing the dose if there is no initial response. Getting the required dose from the available 200 mcg tablets may be challenging. However, 100 mcg misoprostol tablets are available as exempt medicinal products from specialised pharmaceutical wholesalers. Halving a 100 mcg tablet will facilitates 50 microgram doses for women with a scarred uterus. Alternatively a 200mcg tablet can be quartered.

There is no evidence in the literature as to an optimal regime for induction when the cervix is dilated and/or the membranes are ruptured. Although logically in such situations avoidance of multiple digital examinations may reduce the risk of ascending infection, there is a lack of evidence to guide practice. In such circumstances, and if the attending doctor wishes to avoid the use of vaginal misoprostol, oral misoprostol or intravenous oxytocin may be considered. A recent randomised prospective trial has shown that oxytocin is as efficient as misoprostol in inducing delivery of second trimester miscarriages. However, the oxytocin regime has a longer mean time to delivery (Elami-Suzin et al, 2013).

Postpartum haemorrhage also needs to be anticipated. Active management of the third stage should be performed once the cord is clamped. If there is a delay in the completion of the third stage an oxytocin infusion should be commenced and the

bladder emptied. If the third stage is not completed within one hour a formal manual removal of the placenta in theatre should be considered.

Surgical management

Surgical uterine evacuation may be necessary for women with persistent excessive bleeding, haemodynamic instability, evidence of infected retained tissue and suspected gestational trophoblastic disease. Surgical uterine evacuation is associated with anaesthetic and uncommon surgical risks and informed written consent needs to be obtained. Risks that need to be discussed when obtaining consent may include uterine perforation (1%), cervical tears, intra-abdominal trauma (0.1%), haemorrhage and infection.

Analgesia

Analgesia is particularly important for women who labour. All usual modalities should be available including regional anaesthesia and patient-controlled anaesthesia. Regional anaesthesia may be required and should be an option for women. Assessment for maternal coagulopathy and sepsis may also be an option required regional anaesthesia.

5.5 Postnatal care

Staff should gently explain to the couple what their baby might look like after birth and they should always be offered the opportunity to see or hold their baby whatever the gestation. Staff should also make the couple aware that the gender of the infant may not be easily identified at this gestation. Hence, in cases of uncertainty, the fetal gender should not be assigned and confirmation of gender may be available through cytogenetics or post-mortem examination. The couple may decide on a neutral name on naming their baby as these results may take a number of weeks to be known.

Care on the ward after delivery

As continuity of care is recommended, if possible, an individual midwife/nurse should be assigned to the couple. Ideally the couple should be allocated a room on their own after delivery with open visiting. Couples should be referred to a member of the bereavement team, a spiritual adviser of their choosing and, if appropriate, a medical social worker.

Postnatal Investigations

These investigations are closely aligned with the investigations after a late pregnancy loss found in National Clinical Practice Guidelines on Investigation and Management of Late Intrauterine Fetal Death (IUFD) and Stillbirth (Appendix 1).There should be clarity on who is responsible for following up, reviewing and acting upon the results of tests ordered. Couples should be made aware that the overall cause of pregnancy loss remains unexplained in up to half of cases (Michels and Tiu et al 2007).

Investigations following a mid-trimester pregnancy loss may include:

* *Serology for Cytomegalovirus, Toxoplasma, Parvovirus B19, Rubella and Syphilis*

Where test results are positive a microbiologist or infectious disease specialist should be consulted regarding further testing and treatment required (National Guideline on Parvovirus, 2013).

* *Thyroid Function Tests*

Pregnancy is associated with physiological changes in the thyroid function. Thyroid disorders during pregnancy have been associated with adverse health outcomes for both the woman and her offspring including increased risk of miscarriage (Feki et al, 2008; Benhadi *et al*., 2000). A recent study found a significant prevalence of undiagnosed overt and subclinical hypothyroidism in women with pregnancy loss (Khalid et al, 2013).

* *Investigation for Thrombophilia*

Testing for Anticardiolipin antibodies, Lupus anticoagulant and Activated Protein C resistance may be considered (Di Prima et al, 2011). Ideally, investigations for thrombophilia should be undertaken 8-12 weeks postnatally. These tests include fasting homocysteine levels, Protein C and S deficiency, the prothrombin gene mutation and the anti-thrombin III deficiency. Local guidelines may apply regarding the timing of testing for thrombophilia.

Ideally, the identification of thrombophilia following an unexplained miscarriage should result in intervention in future pregnancies to reduce the risk. Although the evidence is unclear there is some evidence to suggest that anti-thrombotic therapy may reduce adverse pregnancy outcome for women with thrombophilia (McLintock et al, 2001).

* *Parental karyotypes*

Parental bloods for karyotype are indicated if a fetal balanced translocation is identified. These tests should also be performed if fetal genetic testing fails and there

is a history suggestive of fetal aneuploidy e.g. fetal abnormality or a history of a previous unexplained fetal death or recurrent pregnancy loss (Sikkema-Raddatz et al, 2000).

* *Maternal autoantibody testing*

Testing for occult maternal autoimmune disease may be indicated in certain circumstances. These include where fetal hydrops is evident clinically, or at postmortem (test anti-red cell antibody serology), or where endomyocardial fibroelastosis or AV node calcification is found at postmortem (test maternal anti-Ro or anti-La antibodies). Maternal alloimmune antiplatelet antibodies should be tested where fetal intracranial haemorrhage is found or fetal thrombocytopaenia detected.

* *Maternal toxicology*

Illicit drug use accounts for a proportion of fetal death (Silver et al, 2007). Maternal urine should be analysed for cocaine metabolites if the history or presentation are suggestive of abuse.

Pathological examination

* *External examination*

In certain circumstances a perinatal pathologist, neonatologist or paediatrician may need to perform a detailed external examination of the baby. A comprehensive external examination of the baby may be helpful in diagnosing obvious fetal structural abnormalities.

* *Analysis of the placenta, cord and membranes*

At time of delivery the clinician should undertake a detailed macroscopic examination of the placenta and cord and the findings documented. Placental swabs should be taken using aseptic technique for aerobic and anaerobic bacterial cultures. In some circumstances sampling of amnion and placental tissue for karyotyping may be required. Pathological examination of the cord, membranes and placenta is recommended whether or not postmortem examination of the baby is requested.

* *Postmortem examination*

Depending on fetal size a postmortem examination should be considered. The value of post-mortem examination after stillbirth is well documented. Couples should be advised that postmortem examination provides more information than other (less invasive) tests and this can sometimes be crucial to the management of future pregnancies. Parents should be given time to make this decision. Attempts to

pressurise couples to choose a postmortem examination should be avoided. Individual, cultural and religious beliefs must be respected. It is recommended that before discussing the postmortem procedure with couples staff should familiarise themselves with the postmortem guidelines outlined in Clinical Practice Guideline Number 4 (Investigation and Management of Late Intrauterine Death and Stillbirth).

Rhesus anti-D prophylaxis

Non-sensitised Rhesus (Rh) negative women should receive prophylactic anti-D Immunoglobulin (Ig) as outlined in Clinical Practice Guideline Number 13 (Appendix 1).

Thromboprophylaxis

Women should be routinely assessed for thromboprophylaxis according to the national guidelines, but miscarriage alone is not a risk factor on its own.

Supportive Care

The doctor and midwife or nurse caring for the bereaved couple should link with appropriate services including the bereavement support staff and hospital chaplaincy. The negative psychological impact of pregnancy loss can be both severe and protracted and affects women and their families in different ways (Turner et al, 1989, Thapar et al, 1992; Neugebauer et al, 1992). Couple's individual needs should be identified and accommodated. Every assistance should be given to facilitate the grieving process including appropriate literature and contact phone numbers. The couple should be offered to have photographs taken if appropriate and/or hand/footprints to be taken. These can be left in the medical chart for a later date if the couple do not wish to take home immediately.

Couples should be given information regarding burial and cremation and be allowed to make their own choice in keeping with their religious and cultural belief systems. Some parents will make their own burial arrangements at a family plot or choose cremation. Other couples may choose to avail of the hospital burial facilities.

Discharge

Before discharge the woman should be reviewed by an obstetrician. Parents should be provided with written information on supportive care (from support groups as well as local pregnancy loss services) and contact information for follow-up. Any existing antenatal appointments should be cancelled so that reminders are not inadvertently sent. A telephone call should be made to the family doctor and public health nurse as soon as possible after the diagnosis of a second trimester miscarriage. A letter or email from the hospital may not be received in time before a bereaved woman presents to her community services.

Follow-up

The woman should be informed that a follow-up appointment with a consultant obstetrician will be arranged and it should be clear who is responsible for making these arrangements. The results of investigations should be available at the follow-up appointment. Subsequent clinic appointments should ideally take place in a quiet and undisturbed location within the hospital, for example, at the end of a gynaecology clinic or preferably in a separate pregnancy loss clinic.

6. References

1. Abbassi-Ghanavati M, Greer, LG and Cunningham, FG (2009). Pregnancy and laboratory studies: a reference table for clinicians. *Obstet Gynecol*. 114 (6), 1326-1331.

2. Abbott D, To, M and Shennan A (2012). Cervical cerclage: a review of current evidence. *Aust N Z J Obstet Gynaecol*. 52 (3), 220-223.

3. Alfirevic, Z., Stampalijam, T, Roberts, D. and Jorgensen, AL. (2012). Cervical stitch (cerclage) for preventing preterm birth in singleton pregnancy. *Cochrane Database of Systematic Reviews*; Issue 4. Art. No.: CD008991. DOI: 10.1002/14651858.CD008991.pub2.

4. Allen R and O'Brien M (2009). Uses of misoprostol in obstetrics and gynecology. *Reviews in Obstet Gynaecol.* 2 (3), 159-168.

5. Althusius SM, Dekker GA and van Geijn HP (2003). Cervical incompetence prevention randomized cerclage trial. *Am J Obstet Gynecol*. 189 (4), 907-910.

6. Brocklehurst P, Gordon A, Heatley E and Milan SJ (2013). Antibiotics for treating bacterial vaginosis in pregnancy. *Cochrane Database of Systematic Reviews*, Issue 1. Art. No.:CD000262, DOI: 10.1002/14651858.CD000262.pub4.

7. Chittacharoen A, Herabutya Y. and Punyavachira P (2003). A randomized trial of oral and vaginal misoprostol to manage delivery in cases of fetal death. *Obstet Gynaecol*. 101, 70–73.

8. Cousins LM, Smok DP, Lovett SM and Poelter DM (2005). AmniSure placental alpha microglobulin-1 rapid immunoassay versus standard diagnostic methods for detection of rupture of membranes. *Am J Perinatol*. 22 (6), 1-5.

9. Di Prima FAF, Valenti O, Hyseni E, Giorgio E, Faraci M, Renda E, De Domenico R and Monte S (2011). Antiphospholipid syndrome during pregnancy: the state of the art. *Journal of Prenatal Medicine*. 5 (2), 41-53.

10. Dodd JM and Crowther CA (2010). Misoprostol for induction of labour to terminate pregnancy in the second or third trimester for women with a fetal anomaly or after intrauterine fetal death. *Cochrane Database of Systematic Reviews,* Issue 4. Art. No.: CD004901. DOI: 10.1002/14651858.CD004901.pub2.

11. Elami-Suzin M, Freeman MD, Porat N, Rojansky N, Laufer N and Ben-Meir, A (2013). Mifepristone followed by misoprostol or oxytocin for second-trimester abortion: a randomized controlled trial. *Obstet Gynecol*. 122 (4), 815-820.

12. Elati A and Weeks AD (2009). The use of misoprostol in obstetrics and gynaecology. *BJOG,* 116 (Suppl. 1), 61-69.

13. Elhassan EM, Abubaker MS and Adam I (2008). Sublingual compared with oral and vaginal misoprostol for termination of pregnancy with second trimester fetal demise. *Int J Gynaecol Obstet*. 100 (1), 82–83.

14. Feki M, Omar S, Menif O, Tanfous NB, Sliman H, Zouar F, Rezigua H, Chelly H and Kaabachi N (2008). Thyroid disorders in pregnancy: frequency and association with selected diseases and obstetrical complications in Tunisian women. *Clin Biochem*, 41 (12), 927-931.

15. Goldenberg RL and Thompson C (2003). The infectious origins of stillbirth. *Am J Obstet Gynecol*. 189 (3), 861-873.

16. Gomez Ponce de Leon R, Wing D and Fiala C (2007). Misoprostol for intrauterine fetal death. *Int J Gynaecol Obstet*, 99 (Suppl 2), S190–193.

17. Hay PE (2004). Bacterial vaginosis and miscarriage. *Curr Opin Infect Dis*. 17 (1), 41-44.

18. Heller DS, Moorehouse-Moore C, Skurmick J. and Baeregan RN (2003). Second trimester pregnancy loss at an urban hospital. *Infect Dis Obstet Gynecol*. 11 (2), 117-120.

19. Ismail A, Zinaman MJ, Lowensohn RI and Moawad, AH (1985). The significance of C-reactive protein levels in women with premature rupture of membranes. *Am J Obstet Gynecol*, 151 (4), 541-544.

20. Khald AS, Joyce C. and O'Donoghue K (2013). Prevalence of sub-clincial and overt undiagnosed hypothyroidism in a pregnancy loss clinic. *IMJ*. 106 (4), 107-110.

21. Keski-Nisula L, Suonio S, Makkonen M, Katila ML, Puhakainen E and Kuronen A (1995). Infection markers during labor at term. *Acta Obstetrica et Gynecologica Scandinavica*, 74 (1), 33-39.

22. Kurki T, Teramo K, Ylikorkala O and Paavonen J (1990). C-reactive protein in preterm premature rupture of the membranes. *Arcch Gynecol Obstet.* 247 (1), 31-37.

23. Lin PC, Bhantnagar KP, Nettleton GS and Nakajima ST (2002). Female genital tract anomalies affecting reproduction. *Fertility and Sterility*. 78 (5), 899-915.

24. McDonald HM, Brocklhurst P and Gordon A (2007). Antibiotics for treating bacterial vaginosis in pregnancy. *Cochrane Database of Systematic Reviews*, Issue 1. Art. No. : CD000262. DOI: 10.1002/14651858.CD000262.pub4.

25. McLintock C, North R. and Dekker G (2001). Inherited thrombophilias: Implications for pregnancy associated venous thromboembolism and obstetric complications. *Current Problems in Obstetrics, Gynecology and Fertili*ty, 2 (4), 115-49.

26. Michels TC and Tiu AY (2007). Second trimester pregnancy loss. *American Family Physician*, 76, 1341-1346.

27. Namouz S, Porat S, Okun N, Windrim R and Farine D (2013). Emergency cerclage. *Obstetrical and Gynaecology Survey*, 68 (5), 379-388.

28. Neugebauer R, Kline J, O'Connor P, Shrout P, Johnson J and Skodol A (1992). Depressive symptoms in women in the six months after miscarriage. *Am J Obstet Gynecol*, 166 (1), 109.

29. Parasnis H, Raje B and Hinduja IN (1992). Relevance of plasma fibrinogen estimation in obstetric complications. *J Postgrad Med*, 38 (4), 183–185.

30. Poulose T, Richardson R, Ewings P and Fox R (2006). Probability of early pregnancy loss in women with vaginal bleeding and a singleton live fetus at ultrasound scan. *Obstet Gynecol*, 26 (8), 782-784.

31. Rey E, Kahn SR, David M, and Shrier I (2003). Thrombophilic disorders and fetal loss: a meta-analysis. *Lancet*, 361 (9361), 901-908.

32. Romem Y and Artal R (1984). C-reactive protein as a predictor for chorioamnionitis in cases of premature rupture of the membranes. *Am J Obstet Gynecol*, 150 (5), 546-550.

33. Sikkema-Raddatz B, Bouman K, Verschuuren-Bemelmans CC, Stoepker M, Mantingh A, Beekhuis JR and de Jong B (2000). Four years cytogenetic experience with the culture of chorionic villi. *Prenatal Diagnosis*, 20 (12), 950–955.

34. Silver RM, Varner MW, Reddy U, Goldenbery R, Pinar H, Conway D, Bukowski R, Carpenter M, Hogue C, Willinger M, Dudley D, Saade G and Stoll B (2007). Work-up of stillbirth: a review of the evidence. *Am J Obstet Gynecol*, *196 (*5), 433-44.

35. Srisomboon J and Pongpisuttinun S (1998). Efficacy of intracervicovaginal misoprostol in second-trimester pregnancy termination: a comparison between live and dead fetuses. *J Obstet Gynaecol Research*, 24 (1), 1–5.

36. Tang OS, Gemzell-Danielsson K and Cho P (2007). Misoprostol: Pharmokinetic profile, effects on the uterus and side-effects. *BJOG*, 99, S160-S167.

37. Turner MJ (1989). Spontaneous miscarriage: this hidden grief. *Irish Medical Journal*, 82 (4), 145.

38. Tong S, Kaur A, Walker SP, Bryant V, Onwude JL and Permezel M (2008). Miscarriage risk for asymptomatic women after a normal first trimester prenatal visit. *Obstet Gynecol*, 111 (3), 710-714.

39. Wagaarachi PT, Ashok PW, Smith NC and Templeton A (2002). Medical management of early fetal demise using sublingual misoprostol. *BJOG*, 109 (4), 462-465.

40. Watts DH, Krohn MA, Hillier SL, Wener MH, Kiviat NB and Eschenbach DA (1993). Characteristics of women in preterm labour associated with elevated C-reactive protein levels. *Obstet Gynecol*, 82 (4), 509-14.

41. Weeks AD, Fiala C and Safar P (2005). Misoprostol and the debate over off-label drug use. *BJOG*, 112, 269-272.

42. Weeks A and Faundes A (2007). Misoprostol dosages for reproductive health. BJOG, 99, S156-S159.

43. Westin M, Kallen K, Saltvedt S, Amstrom M, Grunewald C and Valentin L (2007). Miscarriage after a normal scan at 12-14 gestational weeks in women at low risk of carrying a fetus with chromosomal abnormalities according to nuchal translucency screening. *Ultrasound Obstet Gynecol*, 30 (5), 720-736.

44. Wilson WA, Gharavi AE, Koike T et al. (1999). International consensus statement on preliminary classification criteria for defining Antiphospholipid Syndrome. *Arthritis and Rheumatology*, 42 (7), 1309-11.

45. Wood SL and Brain PH (2002). Medical management of missed abortion: a randomized clinical trial. *Obstet Gynecol*, 99 (4), 563-6.

7. Implementation Strategy

- Distribution of the guideline to all members of the Institute and to all maternity and gynaecology units.
- Distribution to the Director of the Acute Hospitals for dissemination through line management in all acute hospitals.
- Implementation through HSE Obstetrics and Gynaecology programme local implementation boards.
- Distribution to other interested parties and professional bodies.

8. Key Metrics

- Number of women having a second trimester miscarriage.
- Number of women requiring surgical intervention for second trimester miscarriage.
- Number of cases requiring emergency cerclage in second trimester.

9. Qualifying Statement

These guidelines have been prepared to promote and facilitate standardisation and consistency of practice using a multidisciplinary approach. Clinical material offered in this guideline does not replace or remove clinical judgement or the professional care and duty necessary for each pregnant woman. Clinical care carried out in accordance with this guideline should be provided within the context of locally available resources and expertise.

This Guideline does not address all elements of standard practice and assumes that individual clinicians are responsible for:

- Discussing care with women in an environment that is appropriate and which enables respectful confidential discussion.
- Advising women of their choices and ensure informed consent is obtained.
- Meeting all legislative requirements and maintaining standards of professional conduct.
- Applying standard precautions and additional precautions, as necessary, when delivering care.
- Documenting all care in accordance with local and mandatory requirements.

10. Appendices

- Appendix 1: List of National Guidelines
- Appendix 2: FIGO Recommended Dosages 2012
- Appendix 2: Late miscarriage patient information leaflet

Appendix 1: List of supportive National Guidelines

The following guidelines may be also helpful in the care of a women with a second trimester miscarriage:

1. Ultrasound diagnosis of early pregnancy loss (Clinical Practice Guideline No. 1, issued December 2010). http://www.rcpi.ie/content/docs/000001/647_5_media.pdf
2. Investigation and management of late fetal intrauterine death and stillbirth (Clinical Practice Guideline No. 4, issued Oct 2011). http://www.hse.ie/eng/about/Who/clinical/natclinprog/obsandgynaeprogramme/guide4.pdf
3. Management of Early Pregnancy Miscarriage (Clinical Practice Guideline No. 9, issued April 2012) http://www.hse.ie/eng/about/Who/clinical/natclinprog/obsandgynaeprogramme/guide9.pdf
4. Clinical Practice Guidelines for the use of Anti D immunoglobin for the prevention of RHD Haemolytic disease of the newborn (Clinical Practice Guideline No. 13, issued June 2012). http://www.hse.ie/eng/about/Who/clinical/natclinprog/obsandgynaeprogramme/antidprevrhd.pd
5. Preterm Prelabour Rupture of membranes (PPROM) (Clinical Practice Guideline No. 24, issued Ap 2013). http://www.hse.ie/eng/about/Who/clinical/natclinprog/obsandgynaeprogramme/pretermrupture df
6. Irish Maternity Early Warning System (Clinical Practice Guideline 25, issued June 2013). http://www.hse.ie/eng/about/Who/clinical/natclinprog/obsandgynaeprogramme/mewsguidev1.p

Appendix 2: FIGO Misoprostol Recommended Dosages 2012

MISOPROSTOL

Recommended Dosages 2012

	1st Trimester	2nd Trimester	3rd Trimester	Post-Partum
800µg	**Induced abortion**[1] 800µg pv or sl 3 hrly (max x3 within 12hrs)[a]			**PPH treatment** 800µg sl single dose[f]
600µg	**Missed abortion** 800µg pv 3 hrly (max x2) or 600µg sl 3 hrly (max x2)[b]			**PPH prophylaxis**[2] 600µg po single dose[e]
400µg	**Incomplete abortion**[2,3] 600µg po single dose[a] or 400µg sl single dose[a]			
	Cervical ripening pre-instrumentation 400µg pv 3 hrs or sl 2-3 hrs before procedure[a]	**Induced abortion**[1,4] **/ Interruption of pregnancy** 400µg pv or sl 3 hrly (max x5)[a]		
200µg		**Intrauterine foetal death**[4] **13-17 wks** 200µg pv 6 hrly (max x4)[c]		
100µg		**Intrauterine foetal death**[4] **18-26 wks** 100µg pv 6 hrly (max x4)[c]		
25µg			**Intrauterine foetal death**[5] 25µg pv 6 hrly or 25µg po 2 hrly[d]	
			Induction of labour[2,5] 25µg pv 6 hrly or 25µg po 2 hrly[d]	
		Care with previous uterine scar and caesarean section		

Check for updates at **www.figo.org**

Notes
1. Only use where legal and with mifepristone, where available
2. Included in the WHO Model List of Essential Medicines
3. Leave to work for 1-2 weeks unless excessive bleeding or infection
4. Halve dose if previous caesarean section or uterine scar
5. Make sure you use the correct dosage - overdose can lead to complications. Do not use if previous caesarean section

References

- **a** WHO/RHR. Safe abortion: technical and policy guidance for health systems (2nd edition), 2012
- **b** Gemzell-Danielsson et al. IJGO, 2007
- **c** Gómez Ponce de León et al. IJGO, 2007
- **d** WHO recommendations for induction of labour, 2011
- **e** FIGO Guidelines: Prevention of PPH with misoprostol, 2012
- **f** FIGO Guidelines: Treatment of PPH with misoprostol, 2012

Abbreviations pv - vaginal; sl - under the tongue; po - oral; PPH - post-partum haemorrhage; µg - microgramme

Appendix 3: Sample Patient Information leaflet

A second trimester miscarriage is a pregnancy loss after 12 and before 24 weeks of pregnancy which is before the age of viability – the stage at which a baby is thought to have a good chance of surviving if born alive. Losing a baby after 12 weeks of pregnancy is a devastating experience for parents. Some parents may have had up to 24 weeks to plan for their baby's future and with little or no warning that future has been thrown into disarray. The information in this fact sheet is to assist you when you have been told your pregnancy loss is inevitable or in the immediate aftermath of your loss. If you have questions that are not answered in this leaflet you should ask to speak again with your doctor or midwife.

What causes miscarriages in the second trimester?

There is no certainty as to why miscarriages occur during the second trimester. It may be the result of fetal abnormality or it may be because the baby has not been growing properly. In many cases a cause may not be found and there is nothing you could have done to prevent this miscarriage. Miscarriage occurring at this stage in pregnancy is uncommon and occurs in less than 1% of pregnancies.

Symptoms of second trimester miscarriage.

Rarely women will have no symptoms and will be shocked to find at a routine scan that their baby has died. If you wish, you can ask for a second scan to confirm your baby's death. Most women present to their GP or to the hospital with a vaginal discharge or with bleeding that may be old or fresh. There may or may not be lower abdominal pain or backache. It is not unusual for women to also feel unwell for a few days beforehand or for fetal movements to stop.

What happens next?

If labour has not already started your doctor will discuss with you and your partner or companion if it would be best for you to go home to await the spontaneous onset of labour. To assist in the decision-making, your doctor may suggest doing a gentle vaginal examination to see if labour has started or is imminent. If there is a doubt about the rupture of membranes a simple non-invasive test may be carried out to confirm whether the membranes have ruptured or not. You may also need to have a blood test. Based on the findings of these tests and on the scan and your general wellbeing, the doctor will advise you if going home is an option to consider. You may be invited to meet with the Clinical Midwife Specialist or Social Worker before going home. Most, but not every couple will choose to meet with one of these specialists and you are not obliged to do so.

However, if labour has already commenced or if your membranes have ruptured you will be advised to stay in hospital until after your baby is born.

What should I do if I go home?

Many women with an anticipated second trimester miscarriage find going home gives them immediate access to supportive family and friends. As far as possible you should carry on as normal in your daily routine of activities including taking exercise. Adjusting to the devastating news you received may be easier in your home where you may be more comfortable. More than 80% of women with an inevitable uncomplicated second trimester miscarriage will deliver spontaneously within two - three weeks of diagnosis. However, if you experience a vaginal discharge, bleeding or rupture of the membranes you should return to the hospital for assessment.

What happens when I am admitted to hospital?

Ideally, you will be admitted to a ward where there are no women with uncomplicated pregnancies or babies. As far as possible, you will be accommodated in a single room where your partner or companion will be free to spend as much time with you as you wish. A midwife will record you temperature, pulse and blood pressure and advise you on the delivery process. She may ask if you would like to meet with the chaplain or bereavement specialist. A doctor will carry out a physical examination and discuss the induction process with you.

What is involved in induction?

There are two methods of managing your induction; surgical management which involves an anaesthetic or medical management which is less invasive. Surgical management will be recommended only if there is excessive bleeding or if there are signs of infection or if your miscarriage is incomplete and it will be carried out under general anaesthetic.

Medical management is the most common method of induction used and it involves the administration of a combination of two drugs, mifepristone and a prostaglandin. These will be administered either orally or vaginally and are usually repeated at 6 hourly intervals until labour is established. In some instances intravenous oxytocin will be recommended. All three medications induce labour but may cause nausea, vomiting, diarrhoea or mild fever. Throughout your labour you will be offered effective pain relief and an antiemetic if required.

What happens immediately after delivery?

Before or during your labour the midwife looking after you will have asked you and your partner if you would like to see your baby immediately after delivery or if you would prefer to wait until later. Some parents may choose not to do either and there is no correct or incorrect decision in this matter. Where possible, it is usual for staff to take a memento of the baby, such as a photograph or foot print. At your discretion these will be kept in your chart in case you should wish to see them at a later stage. It may not be possible to identify the sex of your baby. Confirmation of the gender before 20 weeks gestation may require either a post-mortem examination or cytogenetics (a study of chromosomes). A post-mortem examination may be suggested and may help to out rule any structural abnormalities in the baby. Alternatively you may wish to have just the placenta examined and have an external examination of the baby which usually includes an X-Ray.

The first 24 – 48 hours after delivery

You will experience afterbirth pains as with any other birth. Pain relief is available for as long as necessary which is usually for the first few days after delivery. You will experience diminishing amounts of bleeding for 7 – 10 days. Women whose pregnancy has extended beyond twenty weeks may experience fullness in their breasts after a day or so. The midwife or nurse taking care of you will discuss how best to manage the discomfort in your breasts and how to suppress lactation. If available, you will be offered to meet the Clinical Midwife Bereavement Specialist and / or Social Worker and / or Chaplain. It is useful to meet with one or other to discuss the arrangements you would like to put in place for your baby's funeral and burial. Alternatively, the staff on your ward will assist you in every way possible. Not everyone chooses to have a religious ceremony and you should make your decision based on what is in keeping with you and your partner's beliefs.

How long must I stay in hospital?

The duration of your stay in hospital, unless you are unwell, is at your discretion. Should you choose to go home early and before you make a decision about your baby's funeral you can return or make contact with the hospital to make the arrangements a day or two later. You should be aware that if, after discharge, you have any of the symptoms listed below you should attend your GP or return to the hospital;

- if your bleeding is heavier than when you were discharged home
- if you have a smelly vaginal discharge

- if you have pain that is not relieved by pain killers
- if you have pain, soreness or swelling in your legs
- if you feel unwell or shivery

Who will support me when I go home?

Hospital staff will continue to support you after your discharge. Your GP and Public Health Nurse will have been informed of your discharge and you may contact them during their working day. Your family and friends will play an important support role but sometimes need to be guided as to how best they can support you and your partner.

A number of booklets including the HSE's 'Dealing with Miscarriage' which you should receive before going home will be useful for answering questions you may have about your future fertility. The Miscarriage Association of Ireland provides an excellent information and support service by women who have had a similar experience to yours. The association also provides support via telephone, email and Facebook (details on website www.miscarriage.ie.)

Follow up after a mid-trimester miscarriage.

You will have been given a date for a follow up appointment. It may be useful during the weeks beforehand to take a note of any questions you may wish to have answered by your doctor and midwife. Questions might include the results of any tests that were carried out on you and your baby and care in your next pregnancy.

Considering another pregnancy

It is normal for women who have lost a baby to want to become pregnant again as soon as possible. It is also normal for women to be fearful about future pregnancies or fearful about their fertility. Whether you choose to try to become pregnant as soon as possible or to delay conception you should know that it is possible to become pregnant without having a first period after a miscarriage. There is no recommended time frame for conception but it is important in the interval between pregnancies that you continue to, or commence taking, folic acid daily. Having a nutritious balanced diet and restricting alcohol intake will help you to physically recover from your miscarriage and help you prepare for your next pregnancy.