

## Guidelines on Antenatal Care (Part I)

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### 1 INTRODUCTION

The aim of this guideline is to provide recommendations on routine care for the healthy pregnant woman. For antenatal management of specific obstetric problems, please refer to the individual College guidelines.

This guideline is divided into two parts. Part (I) is focused on provision and organization of antenatal care, life style, management of minor ailments and clinical examinations. Part (II) is focused on screening for various obstetric and medical problems.

### 2 PROVISION AND ORGANIZATION OF ANTENATAL CARE<sup>1-9</sup>

#### 2.1 Who provides care?

2.1.1 For uncomplicated pregnancies, antenatal care can be provided and shared by obstetricians, midwives or doctors who are trained and competent to provide routine antenatal care.

2.1.2 For pregnancies with complications, obstetricians should be involved in the provision of antenatal care.

#### 2.2 Continuity of care

2.2.1 Continuity of care is important in planning the antenatal care.

2.2.2 For a shared care scheme, a well defined protocol with a referral system to specialist care when problems arise should be established.

#### 2.3 Where to have antenatal care?

2.3.1 Ease of access in local community is desirable for the provision of antenatal care to women with uncomplicated pregnancies.

2.3.2 Specialist level care can be provided by obstetricians in clinics or hospitals.

#### 2.4 Documentation of care

2.4.1 Structured maternity records are preferred. Clear documentation of antenatal care should be ensured for seamless communication between all involved care providers and continuity of care.

2.4.2 Documentation can be implemented by hand-held note or computerized antenatal record system which can be accessed by all involved care providers.

#### 2.5 First antenatal visit

2.5.1 For uncomplicated pregnancies, the first visit can be arranged in local community provided by midwives or doctors who are

trained and competent to provide routine antenatal care.

2.5.2 While routine obstetricians' involvement is not necessary, protocols mutually agreed by all involved care providers should be designed and used to ensure appropriate risk stratification and referrals.

2.5.3 First visit should ideally be provided not later than 14 weeks' gestation.

## 2.6 Subsequent antenatal visit

2.6.1 For a nulliparous woman with an uncomplicated pregnancy, a schedule of ten appointments should be adequate for the whole pregnancy.

2.6.2 For a multiparous woman with an uncomplicated pregnancy, a schedule of seven appointments should be adequate for the whole pregnancy.

2.6.3 For uncomplicated pregnancies, routine involvement of obstetricians is not necessary.

2.6.4 Wherever possible, appointments should incorporate routine tests and investigations to minimize inconvenience to women.

## 2.7 Gestational age assessment

2.7.1 A dating scan should ideally be offered to all pregnant women to determine gestation and to detect multiple pregnancy. It is ideally arranged between 10 – 13 weeks' gestation (using crown–rump length measurement), and acceptable between 14 - 20 weeks' gestation (using head circumference or bi-parietal diameter).

2.7.2 With dating scan, the performance of mid-trimester serum screening for Down's syndrome (if provided) can be improved. Besides, unnecessary induction of labour for post term pregnancy can be avoided.

# 3 LIFE-STYLE

## 3.1 Nutritional supplements

3.1.1 Dietary supplementation with 400 micrograms per day folic acid one month before conception and up to 12 weeks' gestation reduces the risk of having a baby with neural tube defects<sup>10</sup>. Folic acid supplementation should be continued in women carrying thalassaemia trait to prevent folic acid deficiency and maternal anemia.

3.1.2 However, routine iron supplementation to all pregnant women is not recommended as it is not beneficial and may cause unpleasant maternal side effects<sup>11</sup>. Vitamin A supplementation should also be avoided as it may be teratogenic<sup>12</sup>. Besides, routine milk powder supplementation may result in excessive maternal weight gain.

3.1.3 Pregnant women on restrictive diets should have nutrition consultation to customize vitamin supplementation regimen.

## 3.2 Food

A normal mixed diet, relatively high in protein and relatively low in fat and carbohydrate, with if necessary milk supplementation, is recommended<sup>13</sup>. The risk of listeriosis can be reduced by drinking only pasteurized milk,

eating thoroughly cooked food from animal sources and not eating mould-ripened soft cheese<sup>14,15</sup>. The risk of salmonella infection can be reduced by not eating raw or partially cooked eggs or meat.

### 3.3 Medications

Prescription medicines should be used as little as possible during pregnancy and should be limited to circumstances where the benefit outweighs the risk<sup>15</sup>. Few over-the-counter medicines and herbal medicinal products<sup>16</sup> have been established as being safe to take in pregnancy.

### 3.4 Work

The majority of women can be reassured that it is safe to continue working during pregnancy<sup>15</sup>. A woman's occupation during pregnancy should be ascertained to identify those at increased risk through occupational exposure. An example is that primary school teachers are at risk of parvovirus infection.

### 3.5 Exercise

To maintain a good fitness level throughout pregnancy, all women without contraindications should be encouraged to participate in aerobic (such as swimming) and strength-conditioning exercises<sup>15,17</sup>. Performing regular mild to moderate exercise sessions, three or more times per week is advisable. Beginning or continuing a moderate course of exercise during pregnancy is not associated with adverse outcomes. However, contact, high-impact or vigorous sports may involve the risk of abdominal trauma, falls or excessive joint

stress. Scuba diving may result in fetal birth defects and fetal decompression disease<sup>15</sup>.

### 3.6 Sexual intercourse

Sexual intercourse in pregnancy is not known to be associated with any adverse outcomes<sup>15</sup>, but sexual intercourse at term is associated with early onset of labor<sup>18</sup>.

### 3.7 Alcohol and smoking

3.7.1 Excess alcohol, in particular, binge drinking in early pregnancy, has an adverse effect on the fetus. Although there is no convincing evidence of adverse effects of prenatal alcohol exposure at low-moderate levels of exposure, there is also no evidence to confirm that drinking at these levels during pregnancy is safe<sup>19</sup>.

3.7.2 Smoking in pregnancy is associated with low birth weight baby and preterm delivery. Quitting at any gestation should be encouraged. Women who are unable to quit should be encouraged to reduce smoking<sup>15</sup>.

3.7.3 Women should be discouraged from using illicit drug including cannabis, heroin, or soft drugs as they can be harmful to the fetus.

### 3.8 Travel

3.8.1 Long-haul air travel is associated with an increased risk of venous thrombosis, although whether or not there is additional risk during pregnancy is unclear<sup>15</sup>. Wearing correctly fitted compression stocking is effective at reducing the risk.

3.8.2 The correct use of seat belts (that is, three-point seatbelts 'above and below the bump, not over it') can reduce severe maternal injury during a car accident<sup>20</sup>.

## 4 MANAGEMENT OF COMMON SYMPTOMS OF PREGNANCY

### 4.1 Nausea and vomiting in early pregnancy

Nausea and vomiting occurs more commonly in multiple pregnancies and molar pregnancies. Nausea is the most common gastrointestinal symptom of pregnancy, occurring in 80–85% of all pregnancies during the first trimester, with vomiting an associated complaint in approximately 52% of women. Hyperemesis gravidarum refers to pregnant women in whom fluid and electrolyte disturbances or nutritional deficiency from intractable vomiting develops early in pregnancy and this can be associated with transient hyperthyroidism. Symptoms will usually subside after 20 weeks of pregnancy.

### 4.2 Heartburn

Heartburn is described as a burning sensation or discomfort felt behind the sternum or throat or both, which may be associated with acid regurgitation. Other than postural changes, antacids and feeding in small volume may be useful.

### 4.3 Constipation

Constipation is commonly reported during pregnancy and up to 39% of pregnant women reported constipation at 14 weeks<sup>1</sup>. It may be worse especially in patients with previous constipation or patient receiving ferrous supplementation. Other than taking more bran and

wheat fibre, patient can consider using fibre supplements or even laxatives if there is no response.

### 4.4 Haemorrhoids

Eight percent of pregnant women had haemorrhoids in the last three months of pregnancy and it may get worse after a vaginal delivery. As haemorrhoid will only get better after delivery, treatment will mainly be symptomatic during pregnancy.

### 4.5 Varicose veins

Varicose veins are caused by the pooling of blood in the surface veins as a result of inefficient valves in the leg. Same as haemorrhoids, it will only get better after delivery. Patients can be advised to use compression stocking during pregnancy.

### 4.6 Vaginal discharge

The quality and quantity of vaginal discharge often changes in pregnancy. Women usually produce more discharge during pregnancy. If the discharge has a strong or unpleasant odour, and is associated with itchiness, soreness or pain on passing urine, the woman may have bacterial vaginosis (see Part II of this guidelines on infection), vaginal trichomoniasis or candidiasis. However, vaginal discharge may also be caused by a range of other physiological or pathological conditions such as Group B streptococcal infection (see Part II of this guidelines), vulval dermatoses or allergic reactions. High vaginal swab should be taken in women complaining of vaginal discharge and treated accordingly.

#### 4.7 Backache

Back pain or discomfort during pregnancy is a subjective symptom. The estimated prevalence of backache during pregnancy however was as high as up to 61%<sup>22</sup>. Referral to physiotherapist, massage therapy, water exercise might help in relief of back ache during pregnancy.

### 5 CLINICAL EXAMINATION OF PREGNANT WOMEN

#### 5.1 Pre-pregnant weight and body mass index

Maternal body weight, height and body mass index (BMI) should be measured at the first visit and those women with abnormal BMI identified. At each visit, women's blood pressure, pulse and urinalysis for sugar and protein should be performed. However, measurement of body weight at each visit may not be needed for low risk women.

#### 5.2 Breast and pelvic examination

It is a good practice to perform a general examination for every pregnant woman at the first visit including the examination of cardiovascular system, and the breast. However, a routine breast examination is not useful to promote postnatal breast feeding<sup>23</sup>.

Whether to do a pelvic examination or not should be individualized. A routine pelvic examination does not accurately assess gestational age<sup>23</sup>. The need to perform a pap smear has decreased as more and more women has cervical smear surveillance before they get pregnant. Pregnancy per se is not a suitable time for taking pap smear.

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This guideline was produced by the Hong Kong College of Obstetricians and Gynaecologists as an educational aid and reference for obstetricians and gynaecologists practicing in Hong Kong. The guideline does not define a standard of care, nor is it intended to dictate an exclusive course of management. It presents recognized clinical methods and techniques for consideration by practitioners for incorporation into their practice. It is acknowledged that clinical management may vary and must always be responsive to the need of individual patients, resources, and limitations unique to the institution or type of practice. Particular attention is drawn to areas of clinical uncertainty where further research may be indicated.

