

INTRODUCTION

Any female of childbearing age, unless hysterectomised, **MAY** be pregnant, and even the slightest doubt must make one consider if any abdominal pain or vaginal bleeding may be pregnancy related.

Pregnancy is timed from the **FIRST** day of the last period, and from that date lasts up to 42 weeks. The pregnancy is divided into first, second and third trimesters. Each trimester is 13 weeks.

Terms used on shared care ante-natal records i.e. the patient's personal maternity plan (see table 1).

Table 1 – Terms used on shared care ante-natal records

LMP	Last menstrual period.
EDD	Estimated date of delivery – The timing of the pregnancy is written in the notes as 12/40, i.e. 12 weeks has elapsed out of the 40 weeks pregnancy.
T	Term or expected end of pregnancy, therefore T+3 in the notes is 3 days over the EDD.
CEPH	Cephalic (Head).
BR	Breech
G	Gravida, the number of times a woman has been pregnant
P	Parity, the number of times a woman has given birth

ANATOMICAL AND PHYSIOLOGICAL CHANGES IN PREGNANCY

There are a multitude of physiological and anatomical changes during pregnancy that may influence the management of the pregnant patient. These changes include:

- cardiac output increases by 20-30% in the first 10 weeks of pregnancy
- the average maternal heart rate increases by 10-15 beats per minute
- both systolic and diastolic blood pressure fall, on average by 10-15mmHg
- as the fetus enlarges the diaphragm becomes splinted. Breathing effort and rate increase and vital capacity is decreased
- both blood volume (45% increase) and numbers of red cells increase, but not in proportion, so the patient becomes **relatively anaemic**

- due to the increase in blood volume the pregnant patient is able to tolerate greater blood or plasma loss before showing signs of hypovolaemia. This compensation is at the expense of shunting blood away from the uterus and placenta and therefore fetus.

AFTER BIRTH IMMINENT

Resuscitation of the Pregnant Female – special problems

Gastric emptying is delayed in pregnancy due to the progesterone-like effects of the placental hormones. The acidity of the stomach contents increases. Relaxation of the cardiac sphincter makes regurgitation of the stomach contents more likely. **These three factors combined increase both the possibility and severity of aspiration and vomiting.**

Oedema of the larynx and enlargement of the breasts make intubation of the pregnant patient more difficult. Thus, the risks to the airway are markedly increased.

In supine pregnant patients, uterine pressure may cause compression of the inferior vena cava, reducing venous return and **lowering cardiac output by up to 40%.** **This in turn will reduce blood pressure.** To improve venous return and cardiac output, the patient should be tilted to the left by about 30 degrees. This can be achieved by placing padding below their right side and hip or manually displacing the uterus to the left.

REMEMBER that effective resuscitation of the mother will provide effective resuscitation of the fetus. Life support techniques should be concentrated on the mother in order to optimise fetal prognosis. Arrhythmias should be treated according to standard guidelines.

Cardio-respiratory arrest in pregnancy is very rarely due to a primary cardiac cause. Common causes of sudden maternal death include pulmonary or amniotic fluid embolus.

Early ET intubation and large bore IV cannulae (16G) are recommended

If the mother is in cardio-pulmonary arrest follow adult BLS/ALS guidelines and transport immediately to nearest suitable receiving hospital with **Hospital Alert Message** to have an **OBSTETRICIAN ON STANDBY IN THE EMERGENCY DEPARTMENT** for emergency Caesarean section (in this situation emptying the uterus **MAY** facilitate maternal resuscitation).

Effects of Pregnancy on Maternal Resuscitation

Key Points – Effects Of Pregnancy On Maternal Resuscitation

- Any female of childbearing age, unless hysterectomised, **MAY** be pregnant.
- Pregnant women beyond 20 weeks should **ALWAYS** be nursed with 30 degrees lateral tilt (to their left side).
- Gastric regurgitation is more likely and early intubation is preferred.
- Large bore IV cannulae (16G).
- Cardiopulmonary arrest may be caused by pulmonary arrest or amniotic fluid embolism.

METHODOLOGY

Refer to methodology section.