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Course : Physiology

Department: Nursing

Assignment

Physiological adaptations of the female to pregnancy

This includes the changes a woman's body undergoes to accommodate the growing embryo.

1. Endocrine changes :

- Placental hormones
- High levels of oestrogen and progesterone causes a negative feedback on the production of FSH and LH from the anterior pituitary gland.
- Enlargement of the pituitary gland, thyroid gland, adrenal gland and parathyroid gland.
- Increased secretion of erythropoietin.
- Presence of B cell hyperplasia in the islet of langerhans of the pancreas which can result to the increased secretion of insulin and few women develop gestational diabetes.

2. Cardiovascular changes

- During pregnancy, progesterone levels increase. Progesterone acts to decrease the diastolic pressure during the first and second trimester of pregnancy. In response to this cardiac output increases by about 30-50%. An increase in blood pressure in pregnancy could be an indication of pre-eclampsia.
- Pregnancy results in the activation of the renin angiotensin system. This leads to an increase in sodium levels and water retention. This means that the total blood volume increases.

3. Respiratory changes:

- Anatomically, the growth of the foetus causes upward displacement of the diaphgram. This however, does not decrease the total lung capacity significantly since there is an increase in transverse and anterior - posterior diameters of the thorax.
- There is an increase in metabolic rate which leads to an increased demand for oxygen. The tidal volume and the minute ventilation rate increases to help the mother meet the

oxygen demands.

4. Haematological changes

- There is increased erythrocyte segmentation rate.
- Increased fibrinogen and clothing factors vii, viii.
- Increased RBC production.
- Reduced iron and foliate due to increased demands.

5. Renal changes

- Increased glomerular filtration rate.
- Increase in renal plasma flow.
- Increase in kidney size.
- Increase in sodium&potassium retention.
- Excretion of bi carbonate glucose and protein.
- Dilatation of ureter and decreased bladder tone.

6. Metabolic changes

- Rise in glucose levels.
- Insulin resistance Basal metabolic rate and body weight increases.
- There is hyperlipidaemia and increased protein deposition.

7. Gastrointestinal tact changes

- Nausea and vomiting.
- Reduced muscle tone and motility in the GIT.
- Increased gastro-oesophageal reflux causing heartburn.

8. Structural changes

- Hypertrophy and hyperplexia of the cervix, uterus and breast.
- The uterus becomes spherical.
- The cervix softens.

- Enlargement of nipples.
- Arreola pigmentation.