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## **PROGESTERONE PREGNANCY SUPPORT PROGRAMME**

### **What is Progesterone?**

Progesterone is a hormone produced in modest quantities after the release of an egg during a woman's normal menstrual cycle. If the egg remains unfertilized the progesterone level falls about two weeks after ovulation and this is one of the events that leads to menstruation. If an egg is fertilized and a pregnancy begins, the conceptus (implanting pregnancy) sends a chemical message to the ovary. The ovary then continues to produce progesterone in even greater quantities than occurs during a normal menstrual cycle. It is this progesterone that thickens the lining of the uterus (womb) and thereby supports the pregnancy. It also inhibits muscular contractions of the uterus and thus prevents expulsion of the conceptus.

At between 7 and 9 weeks of pregnancy i.e. 5 to 7 weeks after the implantation of an embryo, the developing placenta also begins to produce progesterone. The concentrations of progesterone continue to rise throughout pregnancy and this is thought to have a role in preventing miscarriage and premature birth.

### **What is Progesterone Support?**

In most pregnancies the production of progesterone from the ovary or placenta is more than adequate to fulfil its functions. In some pregnancies, however, lower levels are found and these may be at risk of miscarriage.

Progesterone support is a program of regular administration of progesterone given during the early weeks of pregnancy in order to restore normal levels of progesterone and thereby, hopefully, prevent miscarriage.

### **Who needs Progesterone Support?**

The use of progesterone to support pregnancies that are threatening to miscarry is medically controversial. It was widely practised in the 1940's and 50's but discontinued when several studies failed to show any conclusive benefit.

Furthermore, there was evidence that the use of synthetic hormones could have adverse effects on the developing fetus and the practice of administering hormones in early pregnancy fell into disrepute.

There is however, some evidence that there are a number of women whose pregnancies repeatedly miscarry because their blood levels of progesterone fail to provide the appropriate environment for implantation and growth of an embryo. Our present difficulty is to identify those pregnancies which require this support. There are a number of situations in which we believe progesterone support is indicated but you should consider the pros and cons of this step with your own gynaecologist.

### **What are the Disadvantages?**

#### *Need for daily administration*

Natural progesterone can be administered only by intra-muscular injection, vaginal pessaries or rectal suppositories. It has to be given on a daily or twice daily basis in order to maintain the necessary blood levels. The risk arising from these methods of administration are small but injections can be unpleasant and pessaries can be messy.

#### *Monitoring and Withdrawal*



Because we are aiming to achieve normal levels of progesterone within the blood stream we take twice weekly blood samples to measure progesterone when it is being given by injection. The dose of progesterone is then increased or reduced as required. At all times we are trying to give the minimal dose of progesterone necessary. We gradually withdraw support as the placenta increases its production of progesterone. The need for injections may continue up till the 5<sup>th</sup> month of pregnancy although most patients have stopped soon after the end of the third month.

When the progesterone is administered as a vaginal pessary or rectal suppository the concentrations measured in the blood stream do not accurately reflect the amount that is reaching the lining of the uterus. Blood tests are sometimes therefore not taken during this mode of therapy.

#### *Cost*

Natural progesterone is an expensive product that retails for about \$20 per ampoule for injection and \$3 for pessaries. The daily dose required is between 1 and 3 ampoules or 2 to 6 pessaries. The average out of pocket expense for the program is between \$700 and \$900 depending upon your level of health fund insurance and whether you have ancillary (pharmacy) cover.

#### *Risk of Abnormality*

Max Brinsmead  
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There is no evidence that natural progesterone can produce abnormalities in the developing embryo. This hormone has now been used for over 40 years and the evidence is extensive. Certain synthetic progestins that can be taken by mouth have a weak male hormone action and may cause minor abnormalities of the female genitalia.

In the 1970's it became apparent that an oestrogen based synthetic hormone, once administered commonly during pregnancy, was capable of very serious defects in the genitalia of the developing fetus. These defects, which include the development of cancer, did not become apparent until many years later. The hormone responsible for these effects is called DES or Stilboestrol. It is not a natural body hormone and the amounts administered resulted in much higher levels of "oestrogen" than normally occurred.

There is a concern expressed by some that it might be possible to support a pregnancy that would otherwise miscarry itself. As part of the program we will arrange for an ultrasound scan to be performed twice in the first three months of the pregnancy to check that all is proceeding normally. You may also wish to discuss with your doctor whether you will later undergo further special tests to check whether the chromosomes of the baby are normal.