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## " YTP UPDATE 2020"

### How do you define a Biochemical pregnancy ?

- ASRM – distinguishes biochemical pregnancy
- Characteristic – transient rise in Bhcg
- Combination of

- |   |
|---|
| – a low peak of Bhcg (< 100 IU/ml)                  |
| – Rapid fall in urinary or serum Bhcg concentration |
| – lack of substantial delay in periods              |

- It has been described using various terminology

- Trophoblast in regression
- Pre clinical embryo loss
- Chemical pregnancy

- A conception, which has measurable hCG but does not develop far enough to be seen on an ultrasound, is considered a “chemical” pregnancy. Therefore, all chemical pregnancies are, by definition, unsuccessful and the only evidence that an early pregnancy existed is the measurement of hCG in a woman's blood or urine.”

- Cytotrophoblast cells (the placenta) manufacture and secrete pregnancy hormone (human Chorionic Gonadotropin--hCG)

- During the first several weeks of a pregnancy, the value of hCG in a woman's blood should approximately double every 48 hours. This is known as the “doubling time” and can help in the early diagnosis of an eventual miscarriage or an ectopic pregnancy

- If the placenta grows but the fetus does not, the hormone values may remain normal for a period of time."

- So if a pregnancy is not viable, the hCG levels don't rise within a 48 hour period as they should.

### Silver lining to a dark cloud

- **De Neubourg et al** – biochemical pregnancy to be considered as a positive predictive factor for success in subsequent IVF cycles
- **Levy et al** – after a biochemical pregnancy the following pregnancy had better ongoing pregnancy rate (24.7%) in comparison with the 17% achieved in total IVF- ET cycles
- **Pearson et al** - one biochemical pregnancy , woman was more likely to have a live birth in the second attempt
- **Bates et al** – women who experience an early pregnancy loss after IVF have a greater likelihood of success in the subsequent IVF cycle compared to those who failed to conceive
- **Weckstein et al** – biochemical pregnancy is not indicative of poor prognosis for future IVF cycles. They should be encouraged to go through another IVF cycle

## Causes



### EMBRYO

- Chromosomally Abnormal embryo



### ENDOMETRIUM AND MATERNAL FACTOR

- Immunological
- Anatomical abnormality
- Endometriosis
- Endometrial Factors - thin, Tuberculosis
- Endocrinological Factor

## Management

- No specific defined treatment proposed
- Sine qua non – that HCG level become non detectable
- Counselling



- Test for endocrinopathies
- Hysteroscopy
- Endometrial receptivity array
- Antibodies
- Acquired and inherited thrombophilias
- N K Cells



### PGT-A

## Proposed Strategies

- Blastocyst Culture
  - PGT-A
- Assisted Hatching
- Rectify Endocrinological Disorders
- Endometrial Scratching
  - GCSF infusion
- IV Immunoglobulins
  - IV Intralipids
- Antithrombotic Therapy - Aspirin, Low Molecular weight heparin
  - FET