The Efficacy of Platelets Rich Plasma (PRP) for Ovarian Rejuvenation

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• **Background:** In recent years, an increased approach has appeared in the use of autologous blood products in an effort to assist healing in a variety of medical care interventions. Women with advanced age or history of prior ovarian surgery or even without an obvious cause are at risk for diminished ovarian function and reserve and she will have reduced chance of pregnancy. Autologous PRP is derived from an individual's whole blood which centrifuged to remove red blood cells. The remaining plasma has a 5- to 10 folds higher concentration of growth factors than whole blood. These growth factors have been found to regenerate hard and soft tissues in multiple specialties, such as dentistry, dermatology, plastic surgery, urology, and gynecology.

• **Objectives:**

  1) To estimate the efficacy of trans-vaginal ovarian injection with PRP in rejuvenates ovaries in woman with poor ovarian reserve.

  2) To assess any association of some women variables (age, menstrual status, parity, BMI) as a predicting factors in success of ovarian injection with PRP

• **Setting:** The High Institute for Infertility Diagnosis and Assisted Reproductive Technologies, Al Nahrain University

• **Ethical Consideration:**

  a) The study protocol was approved by The Arab Board of Health Specialization in Iraq.

  b) Written consent will be obtained from each patient after detailed explanations for the purpose of the study, administration, possible benefits or even harms of the intervention.

• **Intervention**

  a. Patient should be fasting for 8 hours prior to the procedure, since it will be done under anesthesia.

  b. From each participant, about 18 ml of blood will be taken from the patient and mixed with 2 ml anticoagulant to form 20 ml of anti-coagulated blood sample.
c. PRP will be extracted using a specially designed centrifuge machine called TD5 PRP Centrifuge. TD5 PRP centrifuge is table top low speed centrifuge. The maximum speed is 4000r/min, the maximum RCF is 2720 xg, and the maximum volume is 4x20ml. The 20 ml blood sample will give us 2.5 ml PRP. Half of this solution (1.25 ml) would be injected in each ovary.

d. Injection Procedure: under local anesthesia. Ultrasound probe will be inserted to visualize the ovaries. Aspiration needle will be used and inserted through this guide, which then follows the biopsy line on the ultrasound screen entering inside ovary, it is very simple to direct the needle toward the right place in the ovary.

e. The procedure should take no longer than 5-10 minutes, then the patient will be watched in recovery room for physical checking before being discharged to home.

- **Follow-Up Schedule:** Periodic blood testing will be done for each patient to monitor ovarian reserve tests expected to give idea regarding ovarian function. After 4 weeks. AMH, FSH will be measured together with measuring AFC by ultrasound to assess to assess the benefit of PRP.

- **Statistical analysis:** Statistical analysis will be performed using SPSS Statistics for Windows software (version 21.0; IBM Corp.). Descriptive statistics will be demonstrated as number, frequency, percentage, table and graph. Inferential statistics will be obtained by using paired t test to estimate the significance of pre and post intervention. P value less than 0.005 will be considered statistically significant.