Section 2 : Executive Summary of the Project

Introduction: Ovulatory dysfunction (OD causes infertility and Clomifene citrate (CC) is an effective treatment while Letrozole is an alternative. Knowledge on efficacy and factors associated with resistance to drugs in a local population is useful.

Objectives: Understand causes of infertility in an infertile population and determine the factors associated with resistance to CC and Letrozole in augmentation of ovulation.

Method: The study was carried at the university infertility clinic at teaching hospital, Ragama. Infertile couples seeking treatment were recruited. A subset of subjects underwent induction of ovulation with CC and induction of ovulation with Letrozole was carried out on a sample of subjects with and without clomifene resistance. A randomised trial was undertaken to compare the effects of either drug in augmentation of ovulation in ovulatory infertility.

Results: Among 518 couples OD was seen in 53%. SFA abnormalities were noted in 45% while 10% had sexual dysfunction. Tubal disease was noted in less than 10%.
Factors associated with OD included irregular menstruation (OR 94.6), being overweight (OR 1.68) or Obese (OR 3.05), presence of acanthosis (OR 7.19), hirsutism (OR 5.31), polycystic ovarian syndrome (OR 88.3), high TSH levels (OR 1.92), a reversed LH: FSH ratio (OR 3.92) and a high testosterone level (OR 7.56).
Ovulation induction with CC was done in 128 subjects and CC resistance was noted in 23%. Factors associated with CC resistance included a duration of infertility > 3 years (OR 2.06), presence of hirsutism (OR 2.76), a higher antral follicle count, presence of PCOS (OR 2.99) and a reversed LH: FSH ratio (OR 3.11).
Induction of ovulation with Letrozole was studied among 50 subjects and resistance was noted in 50%. This was 24% among those who responded to CC but 76% among those who were resistant to CC. Factors associated with Letrozole resistance included presence of hirsutism (OR 3.86) and CC resistance (OR 10.0).
Augmentation of ovulation with CC compared to Letrozole demonstrated a higher and a prolonged rise in FSH. The endometrial thickness was increased with Letrozole and CC was associated with a non-significant increase in the incidence of multi-follicle development.

Discussion: Factors associated with CC resistance should be considered in patient management and counselling prior to treatment. Letrozole seems to be effective only in a minority of patients with CC resistance. Use of Letrozole seems to be favourable for the endometrium while risk of multiple pregnancies may be low.