

# Letrozole increases ovulation in women with infertility being treated with Natural Procreative Technology (NPT)

## Impact of Fertility Medications on Menstrual Cycle Biomarkers in a Multinational Fertility Treatment Cohort

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### INTRODUCTION

- At least 15% of couples are affected by infertility each year.
- Natural Procreative Technology (NPT): A noninvasive fertility treatment to optimize normal reproductive function, which includes:
  - Medical intervention to normalize a fertility cycle
  - Menstrual cycle tracking of fertility biomarkers such as changes in vaginal discharge and bleeding using Creighton Model FertilityCare System (CrMS)
- **Objective:** To determine the association of different medications with changes in menstrual cycle parameters, specifically ovulation, in couples with subfertility.

### METHODS

- Design: Secondary data analysis from data collected during the International Natural Procreative Technology Evaluation and Surveillance of Treatment for Subfertility (iNEST) study (January 2006- January 2016)
- Inclusion: Women with infertility ages 18 years or older, enrolled in iNEST study
- Exclusion: CrMS charts with missing/incomplete data
- Analysis: Descriptive statistics of medication frequency; Generalized linear models

Figure 1. Example of CrMS chart

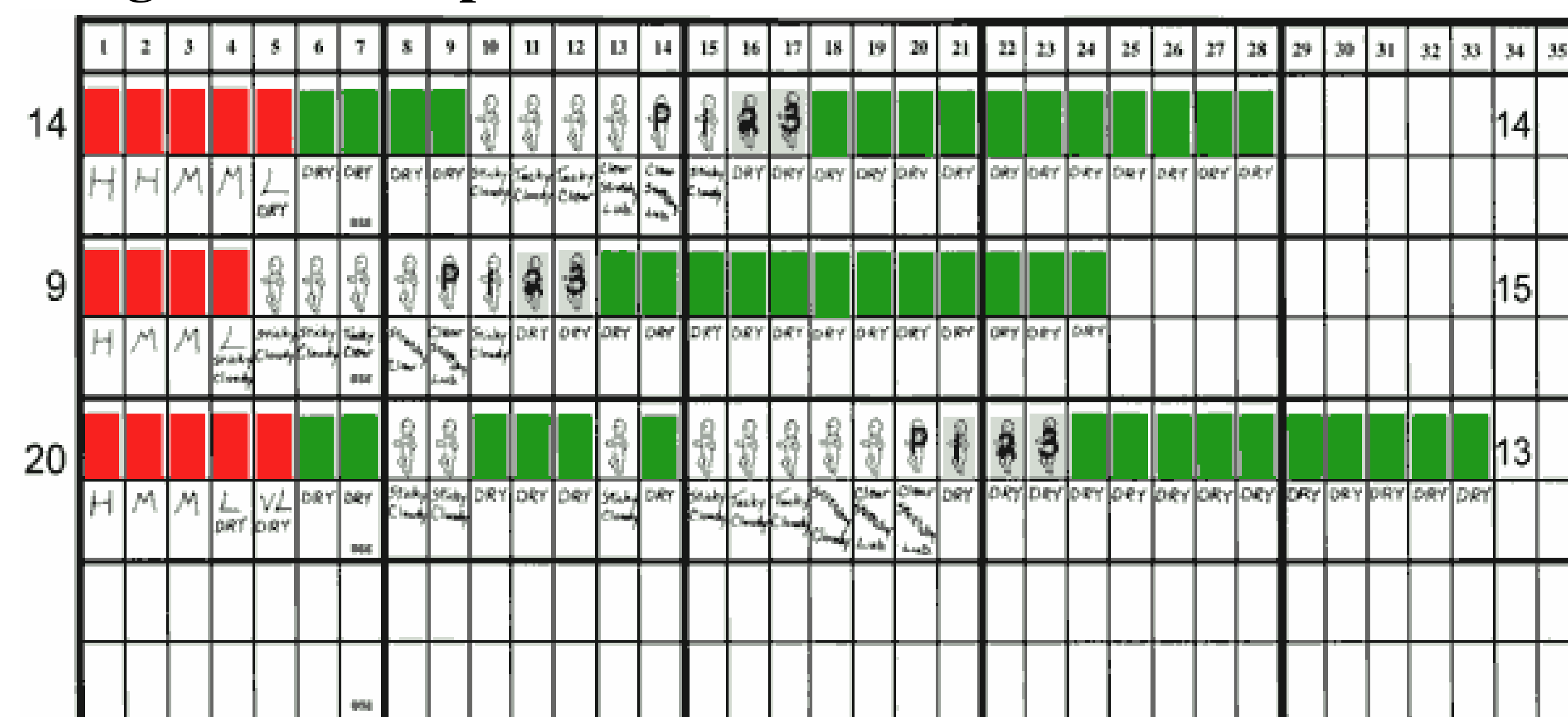


Table 1. Patient Demographics of iNEST Participants

Variable	Women n = 255 (%)
<b>Age (years)</b>	
<35	147 (57.6%)
≥35	108 (42.4%)
<b>Race/ethnicity</b>	
White/Non-hispanic	182 (71.4)
Asian/Non-Hispanic	14 (5.5)
Any Race/Hispanic	12 (4.7)
Other	4 (1.6)
Missing/Not Reported	43 (16.9)
<b>Pregnancy History</b>	
Previous Pregnancy	103 (40.4)
No previous pregnancy	138 (54.1)
<b>Previous Live Birth</b>	
Live birth	43 (16.9)
No live birth	76 (29.8)

Figure 2. Comparison of Medication Frequency and Combination per cycle of iNEST Participants

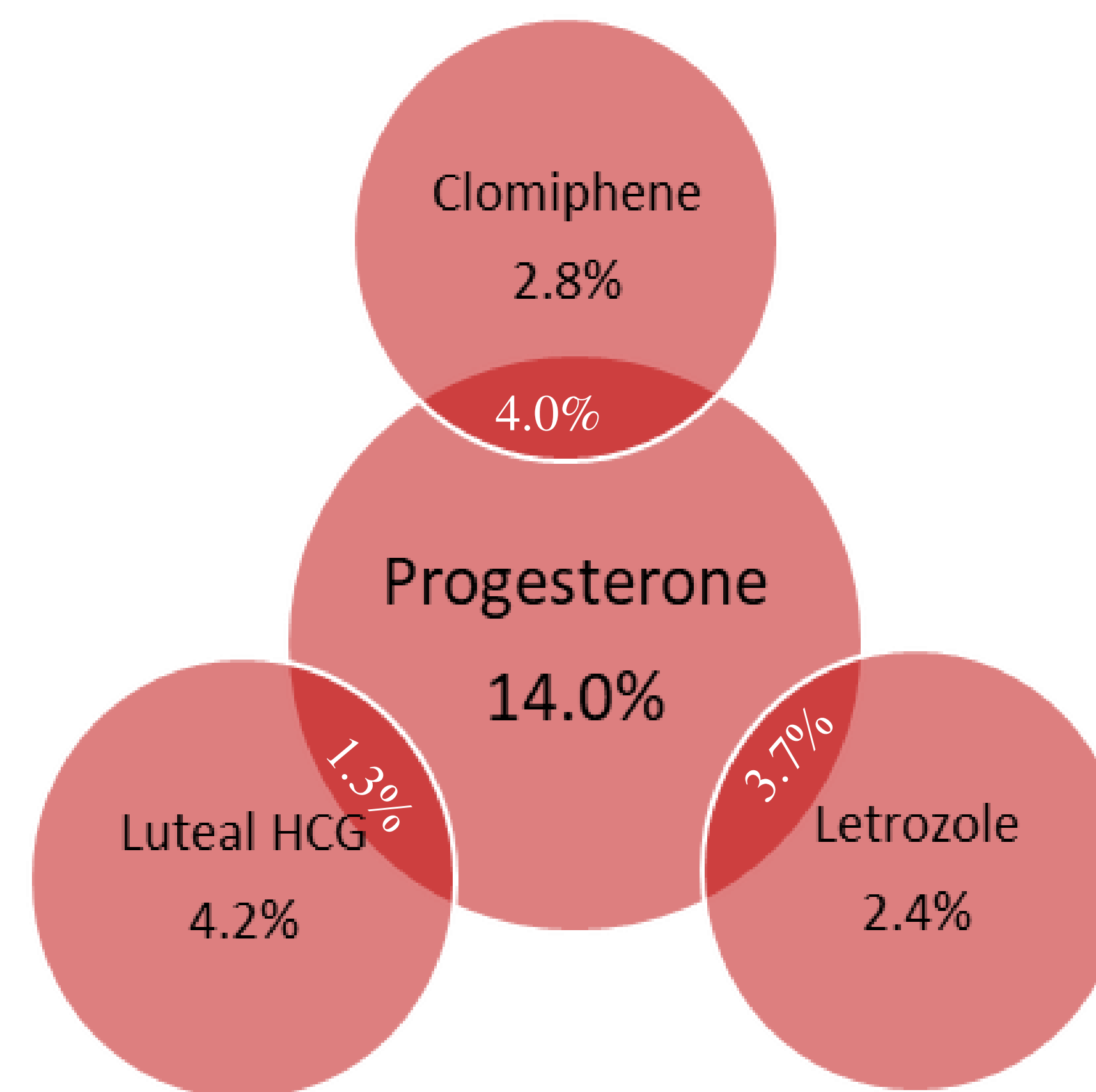


Table 2. Medication Frequency per Cycle of iNEST Participants

Medication	Cycle Level Frequency n = 2563 (%)
Progesterone alone	359 (14.0)
Luteal HCG alone	107 (4.2)
Clomiphene alone	72 (2.8)
Letrozole alone	62 (2.4)
Trigger HCG alone	16 (0.6)
Clomiphene and Progesterone	102 (4)
Letrozole and Progesterone	94 (3.7)
Luteal HCG and Progesterone	34 (1.3)
Clomiphene and Trigger HCG	11 (0.4)
Letrozole and Trigger HCG	13 (0.5)

Table 3. Results of Unadjusted Risk Ratio of Ovulation by Medication

Variable	Risk Ratio (95% Confidence Interval)	P-Value
Progesterone	0.98 (0.90-1.07)	0.6891
Clomiphene	0.86 (0.73-1.02)	0.0893
Letrozole	<b>1.13 (1.03-1.23)</b>	<b>0.0071</b>
Trigger HCG	0.62 (0.36-1.07)	0.0856

### DISCUSSION

- NPT is a novel form of infertility treatment.
- This study is among one of the first of its kind, which paves the way for future studies specifically designed to evaluate medication effect during the menstrual cycle.
- Limitations include data collection and adherence assessment due to self-reporting nature of CrMS.

