How Mira assists in clinical evaluation and treatment

Case Report

Let's Normalize Women Being Well

For Healthcare Professionals

Case report: Patient #1

Patient background

46 Female
G4P3 (ages 7, 11, 14)

Past medical history: unremarkable except for IUD in place for menorrhagia

Medication: Levonorgestrel IUD

BMI 23
Diet mostly vegetarian and has tried intermittent fasting

Exercises cardio 2–3 days per week. Strong yoga and meditation practice daily

Patient Background continued

The patient’s chief complaint was menorrhagia despite the IUD

She was having mid-cycle spotting and menses that lasted 8+ days

Her Gynecologist told her to keep her IUD, and that the bleeding was normal

Summary of symptoms

Abnormal uterine bleeding (8+ days), hot flashes, night sweats interrupting sleep, irritability and anxiety which were pretty new for her, weight gain of 15 lb over the last year, vaginal dryness causing dyspareunia and vaginal itching which was misdiagnosed as lichen sclerosis.

Plan

Check some labs and start tracking hormones with Mira to understand what her estrogen looks like

Based on age and symptoms the provider suspected that she was perimenopausal

Patient Results

Prior endometrial biopsy showed proliferative endometrium

A prior transvaginal ultrasound (TVUS) one year ago showed a correctly placed IUD and posterior fundal fibroid measuring 1.5 cm

Repeat ultrasound: simple cyst on left ovary, ES 8 mm, and re-demonstrated correctly placed IUD and posterior fundal fibroid of 1.8 cm

Blood work collected
(7 days before testing with Mira):

CMP – within optimal range
CBC – within optimal range
Thyroid panel – within optimal range
Iron panel – within an optimal range
Vitamin B12 – within optimal range
Folate – within optimal range
Vitamin D3 – within optimal range
Total Testosterone – 30
SHBG – 140
Estradiol – 946
hs-CRP – within optimal range
Saliva testing: cortisol + DHEAS – normal 4-point cortisol curve

Patient Situation

Immediately before testing with Mira, the patient had 14 days of menstrual bleeding (provider suspected a LOOP cycle)

CD 6–9 She was having increased irritability and insomnia, so the provider started her on oral micronized progesterone (OMP) to help balance out the serum estradiol level of 946

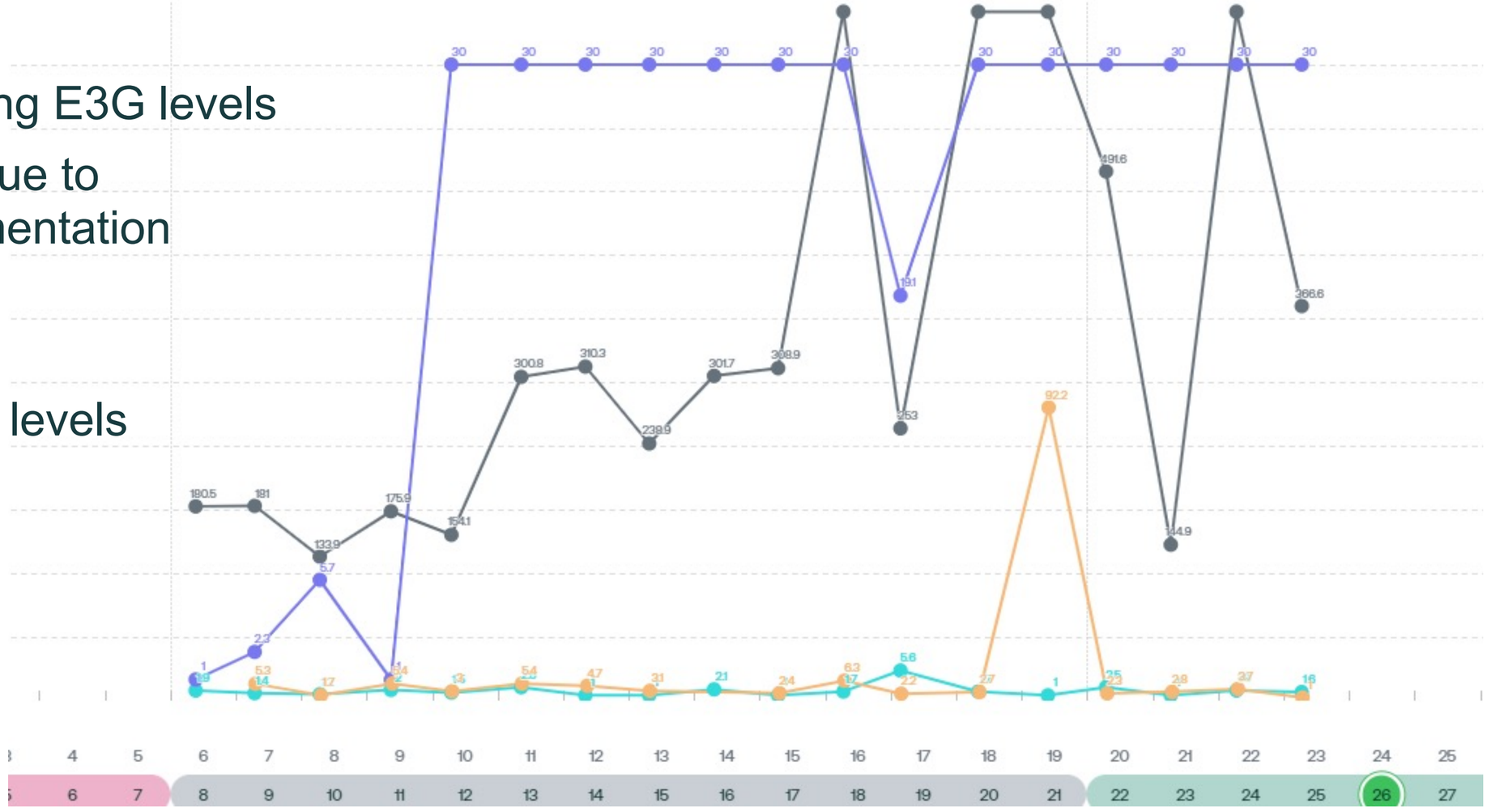
Mira Chart

Mira data discovered:

- Elevated and fluctuating E3G levels
- PdG levels elevated due to progesterone supplementation

Provider assessment:

- You can see estradiol levels were fluctuating significantly, which is pretty characteristic for perimenopause



Treatment / Interventions / Assistance

The Patient was quite symptomatic with hot flashes, irritability, anxiety, and some depressive symptoms so she started on an estradiol patch

Progesterone

- Reported improved sleep

Magnesium glycinate 240 mg at night

Intermittent fasting protocol

Strength training program 4 days a week

The patient did not want to keep charting after using the estradiol patch and progesterone along with the LNG-IUD, so no follow-up Mira testing was completed but rather monitored symptoms

Summary

A 46-year-old perimenopausal woman, with a myriad of symptoms including hot flashes, night sweats, insomnia, anxiety, irritability, depression, and weight gain came to the provider to understand what her hormones were doing

Serum testing revealed very high estrogen, but this is just a snapshot in time. Mira was able to help both the patient and provider understand her underlying hormone pattern and affirm her experience of what symptoms she was having

Summary

Using Mira's data, the provider was able to start by adding progesterone support, and then later added in estradiol to help further optimize her perimenopausal care

Mira was able to demonstrate the wildly varied estrogen fluctuations that occur during perimenopause which is the driver for the majority of symptoms patients experience

3 months follow up the patient is doing well on OMP 100mg QHS and estradiol 0.05mg patch twice weekly. She still has an LNG-IUD in place to help with bleeding. Her symptoms are optimally managed at this point

Case report: Patient #2

Patient background

38 Female
G3P2 (ages 3 and 5)

BMI 28
A regular diet focused on whole foods and cooks a lot at home

Past medical history is unremarkable except for s/p emergent hysterectomy after the birth of a second child due to postpartum hemorrhage

Exercise: Peloton bike / tread + weights 5–6 days per week

Medication: None

Patient Situation

The patient came to see the provider to discuss hormonal status given the fact she had a hysterectomy and has no idea where she is in her cycle

She notices that she has a week or two every month where she is more irritable, has insomnia, and has a shorter temper with her children

She also experiences bloating, fatigue, low motivation, and poor concentration during this time which is starting to affect her professional work

Completed basic labs:

CBC – within optimal range

CMP – within optimal range

Thyroid panel – within optimal range

Folate – within optimal range

Vitamin B12 – within optimal range

Vitamin D3 – within optimal range

Ferritin – within optimal range

Cortisol – within optimal range

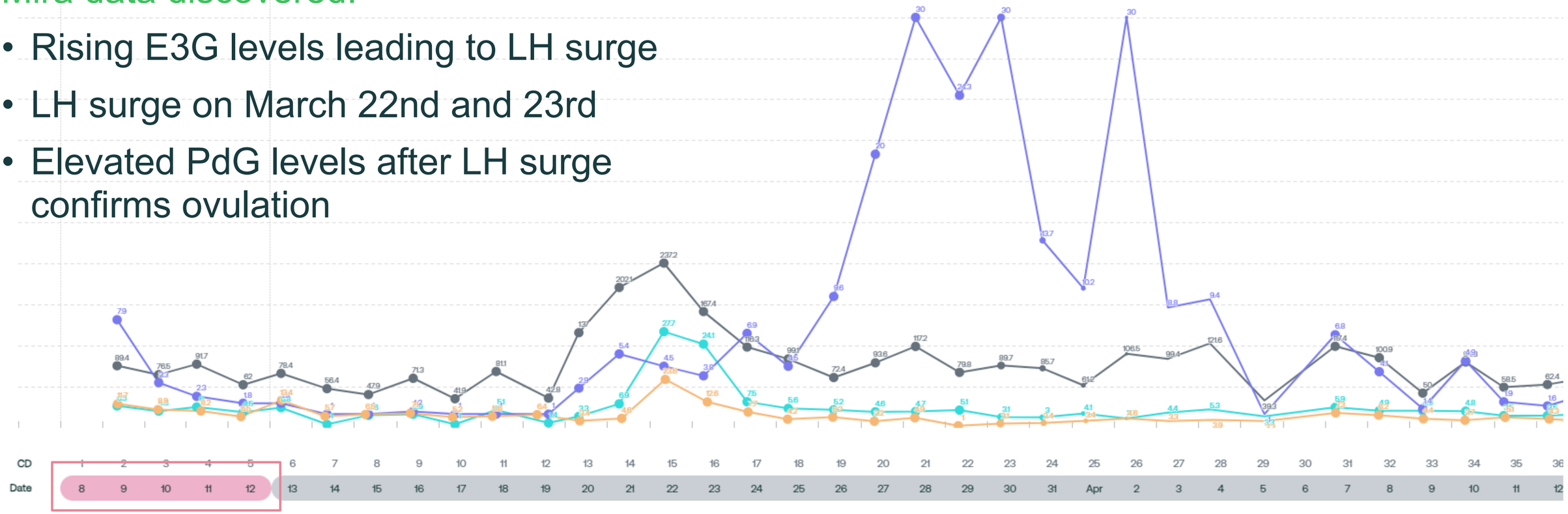
Plan

Start tracking hormones with Mira
to understand what her ovarian hormones
are doing and to deteremine if her symptoms
correlate with a hormone pattern.

Initial Mira Chart

Mira data discovered:

- Rising E3G levels leading to LH surge
- LH surge on March 22nd and 23rd
- Elevated PdG levels after LH surge confirms ovulation



Patient marked her suspected period since she no longer has periods.

Mira Data Discovered

The provider was able to determine that she still has a very expected ovarian hormone response with estrogen predominating the follicular phase and progesterone predominating the luteal phase.

The provider was able to confirm she is still ovulating based on her progesterone response.

The patient tracked her symptoms daily and found that during the luteal phase, she had headaches, bloating, fatigue, and irritability in the second half of the cycle when progesterone started dropping.

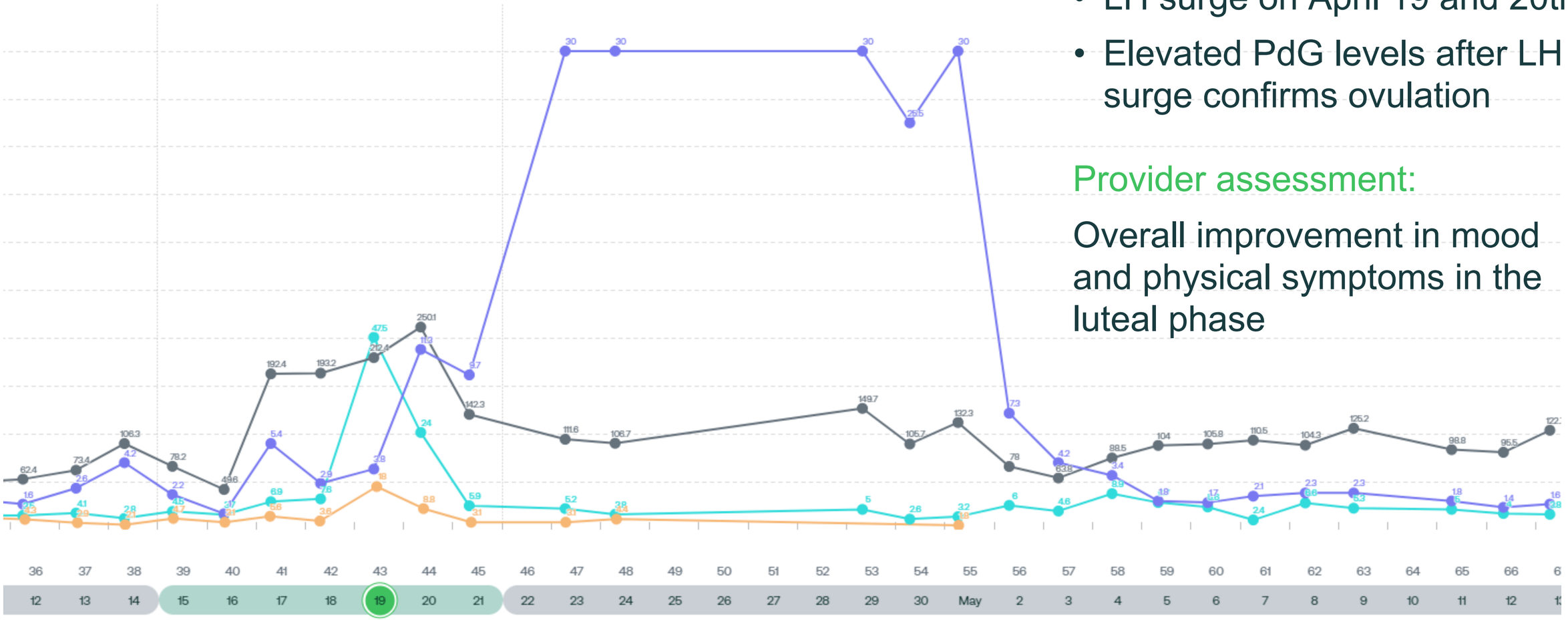
Treatment / Interventions / Assistance

The provider suspected that this was premenstrual dysphoric disorder as her symptoms completely remitted once she was at the beginning of the next cycle, which was able to be determined by Mira since she does not have a period.

Treatment:

- Cyclical progesterone 200mg QHS for 2 weeks on and then 2 weeks off
- Supplement with B6, calcium, zinc, and magnesium as these vitamins/minerals have been shown to be effective for PMDD and there is a natural decline of B6 and calcium during the luteal phase

Follow Up Mira Data



Mira data discovered:

- Rising E3G levels leading to LH surge
- LH surge on April 19 and 20th
- Elevated PdG levels after LH surge confirms ovulation

Provider assessment:

Overall improvement in mood and physical symptoms in the luteal phase

Summary

38 yo s/p hysterectomy after birth of 2nd child with PMDD diagnosed based on Mira charting and symptom tracking

Intervened with cyclical progesterone, B6, magnesium, calcium, and zinc.

Testing hormones with Mira allowed your identification and confirmation of the phase of the menstrual cycle and cycle length

Mira helped to guide the timing of cyclical progesterone initiation

Overall improvement in mood and physical symptoms related to the luteal phase

Outcome

The patient and the provider are able to identify the phase of the menstrual cycle and the patient’s symptoms have greatly improved.

Thank you!