FEMM Medical Case Study Presentation Tool and Reflection

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NUR 620: Care of Women and Children

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FEMM Medical Case Study Presentation Tool (1200 Session)

Case 1:

1. **Reason for consultation:** Abnormal cycles, fatigue (poor sleep).

2. **Relevant clinical history and physical exam characteristics?** G2P2 presents with fatigue, periodic anxiety, hypomenorrhea, short cycles, joint pain, pelvic congestion during menstruation/ovulation, low libido, occasional migraine headaches.

   Medications: Metformin 1000mg ER nightly, multivitamin, Vit D, magnesium citrate (650mg nightly), Fish oil, turmeric, ashwagandha

   FH: DM2 – mother and maternal grandfather; early menopause- mother at 38 years old, maternal grandmother at 40 years old.

   GYN hx: 1st menstruation 14 years old. 10+ migraine headaches per year as an adolescent. History of anxiety- used Zoloft about 10 years stopped in 2022.
   Obstetric Hx: G2P2. Gestational diabetes diet control dx at 29 weeks second pregnancy *significant PPD after second, progesterone for 6+ months.

   PE: 32 year old. Weight: 125lbs Ht: 5'4" BMI 21.5 BP 90/60s HR <60

   Social: denies drug/tobacco use. Occasional alcohol use for "holidays." Exercises 4-5x weekly (aerobic/strength training), Mediterranean diet

3. **Menstrual cycle pattern observed?** 24-26 days in length; hypomenorrhea (L 3-4 days, brown bleeding, clot/tissue vs. normal flow <20ml. Follicular phase average is 14-16 days with identifiable peak day with 7-9 days of fertile mucus. Luteal phase average 11 days with mucus/ brown spotting beginning mid-luteal.

4. **Gynecological ultrasound findings? (if applicable)** Patient has an upcoming surgery for left ovarian dermoid cyst (<3cm) that was discovered on US in 2019. Possible endometriosis excision at the time of surgery.

   Endometrium thickness 6.2mm

5. **Relevant results from lab tests?**

   NaPro done in 2021: Progesterone levels: P+3: 11.7ng/ml; P+5 17.1ng.ml; P+7 9.3ng/ml; P+9 4.0 ng/ml; P+11 2.3ng/ml.

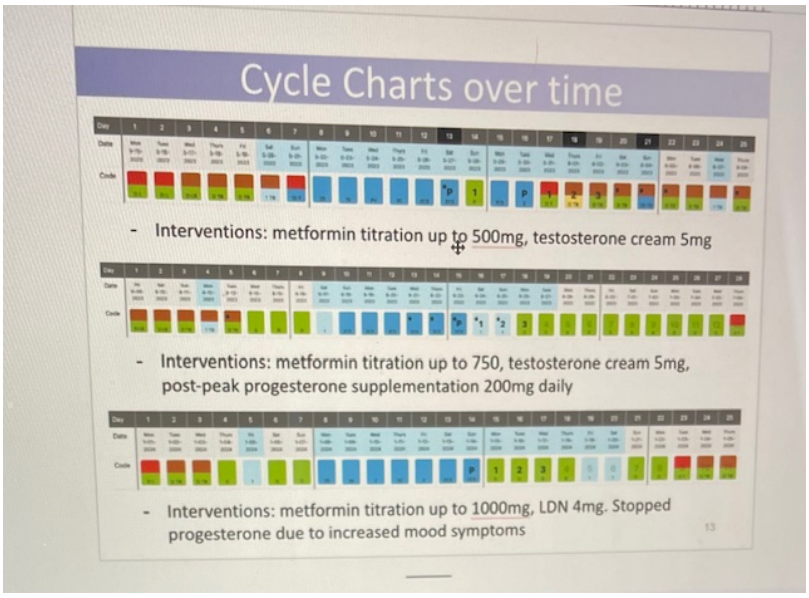
   BHP#1
   Vitamin D 25 OH: 38ng/ml
   HbA1C: 5.5

FSH: 4.3 mIU/ml
Prolactin: 7ng/mL
TSH: 1.22iIU/ml
Estradiol: 40pg/ml
SHBG: 60nmol/L
Cortisol: 13.7ug/dL
DHEA 204ug/dL
Total testosterone: 20ng/dL

OGTT
Fasting 79
101 at 60 min
*symptomatic when arriving home, only did the one hour

6. **Were any new lab or diagnostic tests triggered from Ultrasound or lab results?** In talking- due to the brown blood with cycle charting a pooled TSH should be done, along with T3 and T4.

7. **Diagnosis?** Patient is insulin resistant. Patient is doing everything right as far as lifestyle. Has progressively increased metformin to 1000mg daily. Patient also followed glucose levels with CGM monitor for four months. Testosterone supplementation was trialed due to total testosterone being on the low side, however brown bleeding persisted and mild acne continue (supplement fatigue). Suggested treatment is possible change to pioglitazone. Might tolerate better and have different results as far as insulin resistance.



BHP #2 Jan 2024
Vitamin D 25-OH 44ng/ml
HbA1C: 5.3
FSH: 6.1 mIU/ml

Prolactin: 7ng/mL
TSH: 1.02iIU/ml
Estradiol: 55pg/ml
SHBG: 55.6nmol/L
Cortisol: 17.4ug/dL
DHEA 259ug/dL
Total testosterone: 17ng/dL
Fasting glucose:82 (previous was 76)

8. **Remarks/key take-aways**

- Cortisol was more heavily talked about even though not in the FEMM protocol. One of the providers (functional medicine) was familiar with increased cortisol levels. Suggestion: try Maca, specifically Symphony Natural Health's maca. Minimum does is 2 capsules in the morning, ideally on an empty stomach and 16oz of water. This could further help with progesterone and estradiol in the LT phase.

- In this case one of the physicians noted the importance that prolactin and endometriosis often go together, AND prolactin and anxiety often go together.

- This case is extremely complex as the patient is doing everything correct lifestyle wise. It is suggested to use an SGLT2 inhibitor instead of metformin or in addition to try and work with the diagnosis of insulin resistance. Due to family history/genetics this will most likely be a lifelong medication.

Case 2:

1. **Reason for consultation:** 42 year old presents for hair loss and trying to conceive. G1P1.
2. **2. Relevant clinical history and physical exam characteristics?**
   Comorbidities: anxiety, depression, insulin resistance, hyperlipidemia
   Sx: in her 20s had ovarian cyst with torsion and had a left salpingoophorectomy, has had several cystectomies of right ovary.
   Social: denies drug use, tobacco use, alcohol use
   Medications: metformin 2000mg, omeprazole 10mg, Zoloft 75mg.
   Weight: 265lbs Ht: 5'11" BMI 36
3. **Menstrual cycle pattern observed?** 27-29days. *Patient did not disclose with providers. Does note temperature shifts, discussion was done around mucus observations available in FEMM app.

4. **Gynecological ultrasound findings? (if applicable):** NA
5. **Relevant results from lab tests?**
   General labs:
   iron 23 ug/dl L
   Iron saturation 6% (critically low)
   Ferritin 6.9ng/ml L
   BMP WNL
   Vitamin D 25 OH 20.7ng/ml L
   BHP

FSH: 2.0mIU/ml
Prolactin: 7.1ng/ml
TSH: 1.830uIU/mL
Estradiol: 286pg/ml
Progesterone 0.2ng/ml L
SHBG- 79nmol
Cortisol 5.5ug/dl L
DHEA 41.7ug/dL l
Total testosterone- 5 ng/dl L
Free testosterone 0.3 pg/ml L
Fasting glucose 91mg/dl
FT4 1.15ng/dl
FT3: 2.5pg/ml
T3 88ng/dl
T4 7.3ug/dl

6. **Were any new lab or diagnostic tests triggered from Ultrasound or lab results?**
   F/U done in June 2023
7. **Diagnosis?**
   Autoimmune thyroiditis, insulin resistance, hypoandrogenemia, iron deficiency, alopecia, PCOS, metabolic syndrome. – continue metformin 2000mg daily, discussed adding GLPI or SFLT2, DHEA 75mg daily, ASA 81mg daily, levothyroxine 75mcg daily, increase iron to 2x tablets 65mg fe sulfate. Avoid conception, work to loose weight.

   F/U June 2023: continue levothyroxine, aspirin, and selenium. Continue dhea 75mg just once per week, continue iron, start farxiga 5mg once daily, start rybelsus 3mg once daily (never started) start freestyle libre 2 CGM to monitor glucose spikes. Educated to start glucose revolution.
   F/U in sept 2023: stopped metformin via PCP due to side effects (diarrhea)—restarted. DHEA 25mg once per week. Patient did not start rybelsus. Farxiga daily, levothyroxine, ferrous sulfate.

   F/U: CC: hair still falling out, fatigue, brown bleeding. Pt has lost 10lbs, psych is working to decrease sertraline to 50mg. CT showed incidental kidney stone but negative gallbladder (abdo pain).
   MOST recent labs: Jan 2024
   TSH: 0.008
   T4 7.3
   Free T4 1.24
   TPO Ab 11 IU/ml
   Free T3 4.7pg/ml
   T3 187ng/dl
   Estradiol 102pg/ml
   Progesterone 0/3 ng/mL
   FSH 8.8mIU/ml
   Prolactin 11.3ng/ml

Glucose fasting 121 mg/dl
Insulin fasting 46 iIU/ml

- Suggestion was education most importantly with this patient. Compliance was an issue along with concerns about injections to control insulin as monjaro or Ozempic. Discussion on compounded semaglutide with titration up slowly to 0.5mg SQ weekly. Dose can be taken at night to help with symptoms.

8. **Remarks/key take-aways**

- I think the most significant take-away from this case was continuous education. This patient has different providers managing care. Tough love was suggested as injectable medications may benefit this patient the most in comprehensive care and eventually the goal of conception.

FEMM Case Studies Personal Reflection Summary

The FEMM case studies that I was a part of were good, I especially liked the first one. The second case study was done very quickly, as it had been reviewed previously, so it was difficult to get the whole picture of this patient. With that being said, it was super interesting due to the fact that the first case study the patient was very receptive to care, where the second was noncompliant. It was evident the importance of tracking cycles with the comparison and just how important that is for care. Comprehensive testing was done in case one with hormone testing peak day +3, +5, +7, +9, and +11 for progesterone testing in accordance to the Creighton Model with NaPro testing. Case 2 mentioned the use of temperature tracking, but no further detail was given by the patient. There was a difference in thyroid testing between the two, as the first only had basic thyroid testing done, where the second case had a comprehensive thyroid panel drawn. Discussion around this was done with the FEMM providers, being crucial in the first case study to consider other diagnosis/etiologies.

In addition to FEMM data and case studies, because these providers have additional backgrounds in other types of care, this made the discussion even more beneficial. One of the providers was well versed in functional medicine suggesting a medication available for increased cortisol levels in the first case (not a part of FEMM protocol). In the second case, this provider was not as well versed in injectable medications like Mounjaro and Ozempic. Education among provider to provider was done in the chat box. This is such a valuable resource for both providers and patients as the comprehensive workup can be discussed and transcribed into different care available that may benefit the patient more.

Both cases, along with the discussion showed just how complex women's healthcare and application to fertility is. It also showed the length of time it takes for this type of care and

treatment. The first case the patient had been tracking cycles for years, with multiple sets of labs done in response to changes in medication (cycle tracking was provided in the case study which made it that much more comprehensive). Whereas, the second case the patient was not charting, but changes in care had been done over a significant number of months with medication changes, labs, and education. With multiple diagnoses, changes in care, waiting for results in those changes, and testing with lab studies, this type of comprehensive care is so massively individualized. It is amazing, and truly high-quality healthcare. This was such a valuable opportunity for me and our class. I would love to be a part of it every month.