## ME/CFS in Pregnancy: Myalgic Encephalomyelitis Chronic Fatigue Syndrome

LUCINDA BATEMAN MD AUGUST 2018



# 34 year old married woman with ME/CFS since age 16

Two children: son age 5 and daughter 2. Ectopic early in 2015 with IUD.

10/2015: 16 weeks pregnant with 3rd child. Dad does mornings. MGM helps. Sleeps until noon. Meets son at school bus stop, a 2 block walk, and daughter is in full time day-care. Family time is 6-9 pm. Severe daily headache, IBS, but doing OK on sertraline 150 mg, occ small doses of Percocet or tramadol, zolpidem 5 mg q hs.

4/2016: 3rd pregnancy induced at 39 weeks. 13 hours of labor. Post partum: increased sertraline and more liberal pain meds. Family whisked the 2 older kids away for a few days. Husband on FMLA for 5 weeks which ends soon.

Surviving with amazing husband and significant help from mom. Wakes around 11 am to-1 pm. Mom caring for kids in am. Son graduating from Kindergarten soon.

8/2016: head and body pain escalating, up to sertraline 200 mg, barely managing pain. Exhausted and overwhelmed. 8 hours/24 upright activity tolerance



## What is ME/CFS and why should you care?

**ME/CFS is a** complex multisystem illness characterized by:

Impaired cellular metabolism (low cellular energy production)

Post-exertional Malaise (PEM): relapse after cognitive, physical, orthostatic, emotional stress

Dysregulation of sleep: loss of circadian rhythms, a spectrum of sleep disruption

Cognitive impairment: mostly cognitive fatigability and cognitive slowing

Dysautonomias, orthostatic intolerance, altered tissue perfusion

Blunted or dysregulated stress response (HPA-axis and autonomic nervous system)

Subtle immune abnormalities (cytokines, lymphocyte and NKCell function)

Headaches, myalgia, arthralgia, generalized achiness



### What is ME/CFS? Practice saying "myalgic encephalomyelitis"

A **debilitating** multisystem illness presenting as fatigue, low stamina, post-exertional worsening, disordered sleep, with neurocognitive, autonomic, neuroendocrine and immune manifestations. **Managed primarily by limiting activity!** 

*ME/CFS is different than primary fibromyalgia (FM)* which is 5-10x more common. *FM is an illness of sensory amplification characterized by global hyperalgesia, fatigue, brain fog and disordered sleep (increased sympathetic drive, reduced HR variability). FM responds to many treatments, including low impact exercise. Patients with ME/CFS may meet FM criteria but are more limited, do not respond as well to treatment and typically worsen after activity or exercise.* 



## ME/CFS prevalence:

- At least 1 million Americans
- 85% undiagnosed or misdiagnosed
- Women 2-3x more often affected than men
- Bimodal age of onset: young adulthood and middle age



#### The IOM Report\* Beyond Myalgic Encephalomyelitis/Chronic Fatigue Syndrome: Redefining an Illness

An evidence-based review by a committee of the IOM led to new clinical diagnostic criteria for ME/CFS. An alternate name, **Systemic Exertion Intolerance Disease (SEID)** was proposed but not adopted by the NIH. **ME/CFS** is the preferred term.

\*https://www.ncbi.nlm.nih.gov/pubmed/25695122

\*The IOM (Institute of Medicine) is now the NAM (National Academy of Medicine)



## Clinical diagnostic criteria for ME/CFS:

#### **Required or core criteria**:

1. A substantial reduction or impairment of function accompanied by fatigue, not explained by another condition.

- 2. Post-exertional Malaise (PEM)\* (illness relapse after mental or physical activity)
- 3. Unrefreshing sleep\*

#### And at least ONE of these two manifestations:

- 4a. Cognitive impairment\*, or
- 4b. Orthostatic intolerance and autonomic dysregulation

\*Frequency and severity must be assessed, and the symptom should be present at least 50% of the time and with moderate, substantial or severe intensity. Diagnose after 3 months (children) or 6 months (adults) of investigation and supportive care.



### Other common manifestations of ME/CFS

Variable manifestations of chronic pain: myalgia, arthralgia, headaches, tender lymph nodes, sore throats, chest and abdominal pain, generalized achiness, hyperalgesia

Symptoms or comorbid conditions suggesting immune impairment or inflammation (infection, autoimmune or neuroimmune processes).

The primary treatment is **preventive activity "pacing"** to avoid PEM and supportive care for symptoms and underlying pathophysiology.



## ME/CFS Research: beyond the scope of today's discussion

- Metabolomics—low metabolism suggesting mitochondrial dysfunction (acquired)
- Immune: Post-viral or post-infection syndromes. NK cell dysfunction may increase risk for viral reactivation and malignancies. Evidence of cytokine abnormalities, T-cell dysfunction, chronic immune activation, glial cell activation in brain
- Microbiome studies--- reduced diversity
- Abnormal stress response: HPA-axis and ANS
- Gene expression: measurable changes in sensory and adrenergic receptors, inflammatory markers after an exercise stressor
- Cardiopulmonary exercise testing (CPET):
  - 2 day testing---inability to replicate the test 2 days in a row
- Cognitive slowing after an orthostatic stressor



# Concerns of women with ME/CFS who want to bear children

#### Women understandably worry about:

- Risks during pregnancy to mother and/or fetus
- Medications during pregnancy and breast feeding
- The stress of delivery and recovery post-partum
- The stamina needed to be an effective parent

Parenting is a unique opportunity to bring meaning and life satisfaction to someone otherwise unable to maintain full time productivity



# Research regarding ME/CFS and pregnancy is limited

#### Gynecological issues are more prevalent in ME/CFS

- Irregular cycles, periods of amenorrhea, and sporadic bleeding between menstrual periods; factors suggesting abnormal ovarian function--such as a history of polycystic ovarian syndrome, hirsutism, and ovarian cysts--were reported more often in 150 CFS cases compared with 150 controls. (Harlow 1998)
- Gyn surgeries, early menopause, abnormal menstrual bleeding, endometriosis, pelvic pain and use of HRT were all more common in women with CFS in a population-based case-control study of 157 women. (Boneva 2011, 2015)

#### Our own Peggy Allen published one of the most useful articles in 2008, combining the scientific literature and expert opinion.

• Chronic fatigue syndrome: implications for women and their health care providers during the childbearing years. Allen PR. J Midwifery Women's Health.



### During pregnancy

Schacterle and Komaroff 2004: Sent a detailed questionnaire to 86 women with 252 pregnancies before and after onset of CFS.

- CFS symptoms during pregnancy: no change in 29 (41%), improved symptoms in 21 (30%), and worsening of symptoms in 20 (29%) of 70 subjects.
- **Higher frequency of spontaneous abortions** in the pregnancies <u>after CFS onset</u> versus <u>before CFS onset</u> but no differences in the rates of other pregnancy complications.
  - 22 [30%] of 73 pregnancies after CFS onset
  - 13 [8%] of 171 pregnancies before CFS onset (P<.001)</p>
- Developmental delays or learning disabilities were reported more often in children born <u>after CFS onset</u> (9 [21%] of 43 children) compared to children born <u>before CFS onset</u> (11 [8%] of 139 children) (P =.01).
- No current evidence that ME/CFS can be passed to fetus during pregnancy or through mother's milk to breast fed baby (maternal infectious onset) but studies do show increased familial risk



# Medications during pregnancy and lactation

#### Medications used to treat ME/CFS include those for:

- Sleep disturbances
- Pain
- Orthostatic Intolerance
- Mood and cognition



#### Advise on a case-by-case basis with the usual consideration of risk:benefit ratio

- •ME/CFS patients do surprisingly well during pregnancy and lactation, even off their medications.
- Changes in blood volume, circulating hormones, immune changes, resting with the baby may play a positive role.



## The delivery: practical advice

#### Reduce unnecessary stress on the mother:

- Maintain vascular volume with IV fluids before, during and after delivery
- Provide adequate pain management including epidural for pain control if indicated
- Avoid surgery (C-section) unless the risk to the baby, or demands of prolonged or complicated labor outweigh the risks of anesthesia, pain, infection, longer recovery time
- Consider "stress doses" of hydrocortisone: 25 mg IV during labor and 25 mg IV 4-6 hours after delivery



### Post partum: breast vs bottle?

The rate of postpartum CFS relapse in mothers who are breastfeeding as compared to bottle-feeding has not been examined, nor have there been any studies to explore any influence CFS may have on initiation and maintenance of milk supply.







### Post partum:

Schacterle and Komaroff found that:

- **50% of patients surveyed reported worsening of CFS symptoms**
- 30% reported no change, and
- 20% reported improvement during the postpartum period

Immune and hormonal changes combined with the physical and emotional demands of caring for an infant, particularly nocturnal sleep disruption, magnify the risk of ME/CFS relapse.



## Increased assistance post-partum is imperative

Allow mom more time for recovery

Help mom get adequate sleep

Arrange for significant help from partner, family

and friends

Reduce childcare responsibilities, utilize leave from employment demands, consider home health or hired help

Risk of ME/CFS relapse 1-3 months post-partum is significant



## Summary TIPS for success

Encourage and allow "pacing" of activity to reduce risk of PEM and ME/CFS relapse

Orthostatic Intolerance, low blood/fluid volume-----improved during pregnancy, manageable using IV fluids during delivery, and tends to worsen again post partum

High hormone levels-----seem protective and helpful during pregnancy but may amplify problems when they drop post partum, so be proactive

Post-partum concerns----sleep deprivation, post partum depression and anxiety, emotional and physical demands without adequate help to achieve rest and recovery

Additional help may be needed as the baby gets more active and independent



### Citations

1) **Beyond Myalgic Encephalomyelitis/Chronic Fatigue Syndrome: Redefining an Illness.** Committee on the Diagnostic Criteria for Myalgic Encephalomyelitis/Chronic Fatigue Syndrome; Board on the Health of Select Populations; Institute of Medicine. Washington (DC): National Academies Press (US); 2015 Feb. The National Academies Collection: Reports funded by National Institutes of Health.

2) Harlow BL, Signorello LB, Hall JE, Dailey C, Komaroff AL. **Reproductive correlates of chronic fatigue syndrome**. Am J Med. 1998 Sep 28;105(3A):94S-99S.

3) Boneva RS et al. **Gynecologic history in chronic fatigue syndrome: A population based case control study.** J. Women's Health 2011: Jan; 20 (1) 21-28

4) Boneva RS, Lin JM, Unger ER. Early menopause and other gynecologic risk indicators for chronic fatigue syndrome in women. Menopause. 2015 Aug;22(8):826-34.

5) Schacterle R, Komaroff. A comparison of pregnancies that occur before and after the onset of chronic fatigue syndrome. A. Arch Intern Med 2004;164:401–4.

6) Allen PR. Chronic fatigue syndrome: implications for women and their health care providers during the childbearing years. Allen PR. J Midwifery Womens Health. 2008 Jul-Aug;53(4):289-301; quiz 399. doi: 10.1016/j.jmwh.2007.12.001.



### Additional References:

<u>ME/CFS and pregnancy panel discussion</u> on YouTube BHC: "The Experience of Childbearing with ME/CFS: Highlights and Tips from Three Women" Peggy Allen interviews a panel of 3 mothers with ME/CFS. Recorded 8/1/18. *https://www.youtube.com/user/OFFERUtah/videos* 

CDC ME/CFS webpage: https://www.cdc.gov/me-cfs/index.html

<u>**Review for clinicians:**</u> Review of Myalgic Encephalomyelitis/Chronic Fatigue Syndrome: an evidence-based approach to diagnosis and management by clinicians. Bested AC, Marshall LM. Rev Environ Health. 2015;30(4):223-49. doi: 10.1515/reveh-2015-0026.

