Meeting: Workshop on Outcomes in Mothers with Rheumatic Diseases and their Offspring

Date: June 4th, 2015
Location: Montreal, Quebec
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The meeting involved presentations by various researchers on pregnancy and birth related issues as it relates to rheumatic disease. Refer to the attached agenda for more information.

1. **The Offspring of SLE Mothers'Registry: an overview - Dr. Evelyne Vinet**

    - The presenter discussed medication use in pregnant women with SLE. The medication usage seemed very similar to women living with inflammatory arthritis.
    - A number of question ensued about how the administrative data may be underestimating data and that medication use seemed lower.

2. **Neonatal lupus: Where are we? – Dr. Earl Silverman**
    - Neonatal lupus is an uncommon autoimmune disease manifested primarily by cutaneous lupus lesions (skin rash) and/or congenital heart block.
    - There are questions regarding whether the use of plaquinel during delays the onset of rash infants. Often, it is recommended to not treat the rash.
    - When a mother has a child with neonatal lupus, the risk of congenital heart block is only 15% in subsequent pregnancies.
    - There are questions concerning how to treat and most often it's with steroids. Side effects include learning disabilities in the child and often this is resolved by age 2. This was actually concerning particularly when many women with inflammatory arthritis need to take prednisone during pregnancy!

3. **Infertility in RA: A Knowledge Gap Worth Exploring – Dr. Bindee Kuriya**
    - This was one of the more interesting presentations as I've experienced many of these issues first hand. It was positive to see that a researcher is interested in exploring these issues further.
    - Presenter noted that she has received numerous questions in clinic about whether patients can even get pregnant
    - Current evidence indicates that women with RA have fewer children than the non-RA population.

- There are also more women with RA who are childless and evidence suggests there is decreased fertility even prior to diagnosis.
- Women with RA often took more than 12 months to become pregnant.
- Data was presented from the Danish national birth cohort concerning time to pregnancy. I asked whether there was any data available on miscarriage but there wasn't.
- The presenter noted several potential mechanisms which could explain infertility issues:
    - Diminished ovarian reserve - It was found that women with RA had lower levels (less than 1) of anti-millarian hormone (amh), This essentially means they have a harder time producing viable eggs.
    - Personal choice – Women have issues with functional ability, fatigue, medication issues and concerns about passing on RA.
    - Decreased sexual desire – This could be caused fatigue, mental distress, low self-efficacy. 31% of patients reported impairment.
    - Inflammation – cytokine expression may effect implantation.
    - Medications - use of NSAIDs might also impair, case reports suggest link between NSAID use and infertility. Methotrexate is obviously teratogenic. However, even after discontinuation, it doesn't seem to affect ovarian reserve.
- Future data sources include the Better Outcomes Registry and Network in Ontario.

4. Prediction of adverse pregnancy outcomes and prevention with low-dose aspirin – Dr. Emmanuel Bujold

- The presentation focused on the management of preeclampsia from an obstetrical perspective.
- Preeclampsia causes the deaths of 100,000 women in the world annually.
- This is becoming more of an issue for people living with arthritis as they face more cardiovascular issues as part of the systemic nature of the disease.
- He emphasized early diagnosis as treatment options become more limited as time goes on.
- One early indicator is that the uterine spiral artery is monitored early in pregnancy through ultrasound and blood flow Dopler. This artery does not transform in the 10^{th} and 16^{th} week of pregnancy and is an early indication of preeclampsia.
- Ironically, both Louise Bergeron had non-transforming uterine arteries in our second pregnancies!
- He noted that many women are resistant to low-dose aspirin which is a common treatment of preeclampsia. He thinks a higher dose of 100 mg taken right before time is optimal.
- Much discussion ensued about whether taking the medication at bedtime may have resulted in increased adherence since the patient has integrated the practice into their bedtime routine.

- Some of the researchers weren't aware that prescribing aspirin during pregnancy was done. I noted that it is common practice in a high-risk pregnancy unit (as did a maternal-fetal medicine doctor sitting beside me).

5. Assessing pregnancy outcomes in women with rheumatic diseases using US administrative databases - Dr. Eliza Chakravarty

- The presenter highlighted the benefits and types of administrative datasets in the U.S, such as discharge data, CDC and administrative claims data.
- She mentioned how gaining access to the electronic health records used by the big insurers is a particularly rich data source. But it's very difficult to gain access as a researcher unless you can partner with someone at the organization.
- Generally, it is more difficult to obtain data because pregnancy is uncommon and it is even less common when you're asking for data about a specific sub-group of people with a disease or condition.
- One area of concern from a patient perspective is that because the sample sizes are small, there are 'power issues' and therefore it's difficult to syphon out the risks accurately.

6. Methodological challenges in perinatal epidemiology – Dr. Robert Platt

- This was a highly statistical/mathematical presentation and I was often lost in the details, but I caught a few points that make this man's perspective valuable.
- For example, it is important to capture certain elements like all pregnancy data even if it doesn't result in a 'live' birth. If we only count 'live' births then we could be missing important data and risks (e.g. could the medication or condition have caused more complications in pregnancy?).

7. Drug exposures and pregnancy outcomes: the Quebec Pregnancy Cohort experience - Dr. Anick Bérard

- The presenter highlighted the known issues in capturing good pregnancy data – that pregnant women are excluded from clinical trials.
- Of particular concern though is that there is evidence that in Quebec, 6% of pregnant women use or have used at least one known teratogen during pregnancy (Kulaga et al., BJOG 2009)
- The presenter explained how she has been systematically collecting pregnancy data and medication usage in Quebec from 1998 – 2009 – that's 289,688 pregnancies!
- She used her data collection in pregnant women who are taking anti-depressants. Her data showed a high prevalence of medication use, especially antidepressants, during pregnancy.
- Data are showing that SSRIs are increasing the risk of spontaneous abortion, major congenital malformations, lower birth weight and lower cognitive function, hence meeting all principles of teratogenicity.

- In addition, continuing antidepressant use during pregnancy does not show effectiveness.
- You can read more about it here - http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0093870

Next steps for the group:

- Share existing data that is collected by the research
- Investigate possibility of conducting an ACR study group on pregnancy and fertility (April 2016)
- Look at developing guidelines for the collection of data in order to maximize current data collection efforts

General comment: I found out about some of the French resources available which would be important to highlight in any future CAPA resource on pregnancy and parenting:

- http://www.lecrat.org/sommaireFR.php3
- www.medicamentgrossesse.org