Comprehensive Research Experience for Medical Students (CREMS)

2022 Supervisor and Project Information Form

Please complete and return via email ONLY to crems.programs@utoronto.ca by February 18, 2022.

**Supervisor Information**

*NOTE: CREMS will not support pre-determined pairings of students and supervisors. Supervisors must agree to open their projects to all students and interview all that are interested.*

**Name:**
Modupe Tunde-Byass

**Email:**
Modupe.tunde-byass@nygh.on.ca

**Department:**
OBSTETRICS AND GYNAECOLOGY

**Hospital/Research Institution:**
NORTH YORK GENERAL HOSPITAL

**SGS Department(s) (if applicable):**
Click or tap here to enter text.

**ORCID ID** (see https://orcid.org/ - If you do not have an ORCID ID we encourage you to sign up for one):
0000-0002-5437-7124

**Location of Work:**
NORTH YORK GENERAL HOSPITAL - REMOTE ACCESS AVAILABLE

**Field of Research (up to 4 keywords):**
ECTOPIC PREGNANCY, METHOTREXATE, FAILURE, RUPTURE.

**Student contact time** (number of hours per week YOU are available to the student for any concerns or to review progress):
2-4 hours/week
Project Information

NOTE: If this project is selected, this information will be posted on CREMS website for interested student applicants to view research opportunities.

PROJECT TITLE:
RUPTURED ECTOPIC PREGNANCY FOLLOWING FAILED MEDICAL MANAGEMENT WITH METHOTREXATE.

IS SERIAL β-HCG A GOOD PREDICTOR OF RUPTURE?

PROJECT DESCRIPTION:
Including background, aim(s), methodS and significance of the project. Maximum 300 words.

Background: Ectopic pregnancy (EP) accounts for 1% to 2% of all pregnancies. The majority of EP are in the fallopian tubes. A ruptured ectopic pregnancy can be life threatening and constitutes a surgical emergency. The diagnosis of EP has been improved by using transvaginal ultrasound and serial quantification of β-HCG. The management options of EP can be expectant, medical, and surgical. Medical treatment with methotrexate is safe, it avoids the risk of surgery in selected cases, aims to improve reproductive outcomes and preserves fertility.

Objectives: The primary objective of the study is to identify risk factors and to determine if serial β-HCG measurements can identify cases that are at a higher risk of rupture. Secondary outcomes are blood loss and length of stay of patients with ruptured EP.

Methodology: This is a retrospective cohort study of patients with sonographically diagnosed EP seen at the Early Pregnancy Assessment Clinic (EPAC) from 2016 to 2020. All patients who received methotrexate treatment and those that presented with ruptured EP after failed Methotrexate treatment were included. The charts of all cases with ruptured EP and treated with surgical treatment will be reviewed. The baseline demographics and β-HCG trends of cases with ruptured EP will be compared with resolved ectopic pregnancy (controls).

Data and Statistical analyses: Continuous variables expressed as mean ± standard deviation. Continuous variables between the case and control will be compared using the two-sample t-test.

Significance: The aim of this study is to identify if serial β-HCG measurements can predict patients at higher risk of rupture, this information will be useful for clinicians in being able to further counsel their patients about the risk of rupture. Additionally, it will further expand the current state of knowledge. Lastly, this may help the clinic to explore other methotrexate dosing protocol if need be.

Is this project remote-capable (in case of new restrictions) or have an alternative remote option? ☒ Yes, remote capable ☐ No
☐ Yes, alternate remote option. Please specify (100 words max): Click or tap here to enter text.

If human subjects are involved, have the appropriate Research Ethics Board approvals been obtained? ☐ Yes ☒ No ☐ Not Applicable
If yes, please list the application submission date:

Do you expect this work will be published?  
☒ Yes  ☐ No  ☐ Uncertain / Other
Research Environment and Student Roles and Responsibilities

Please be specific as possible. Please describe the research environment, including availability of required facilities/equipment/expertise, supervisor’s experience and mentorship plans. Please clearly outline the student role(s) and responsibilities related to the project, potential educational value, and indicate who will serve as the student’s direct report for daily oversight (PI, PHD student, technician, etc.). Maximum 300 words.

Due to COVID restrictions the majority of the project will be done remotely. The supervisor is the lead Physician of the Clinic and has worked with students in the past. The student will have the opportunity to learn about Early pregnancy complications and management. The student will be mentored by Faculty who are passionate about this topic. Understand research techniques, be able to retrieve data, analyze data’s use of Excel and Statistical analysis. Have the opportunity to be co-author. Understand the important of confidentiality and data stewardship. Understand the importance of remote data access.

It is expected that the student is able to work independently but will be supervised by the PI. Research background is useful but not mandatory. The expectation is that the project is going to be published in a peer-reviewed journal.