**Pregnancy outcomes following Low Molecular Weight Heparin and Aspirin therapy and the psychological impact due to treatment in mothers with recurrent miscarriages**

**Introduction, Background and Justification**

Antiphospholipid syndrome (APS) is an autoimmune condition characterized by the presence of antibodies recognizing phospholipid and phospholipid-binding proteins (1). Vascular thrombosis and pregnancy complications such as recurrent spontaneous miscarriages, intrauterine growth retardation, intrauterine death, preeclampsia and maternal thrombosis are some of the wide range of clinical manifestations associated with APS (2, 3). Recurrent miscarriage is the most common obstetric complication associated with APS and about 10 – 15% women with recurrent miscarriages are diagnosed with APS (4, 5). In addition, premature delivery can complicate pregnancy due to pregnancy-associated hypertensive disease and uteroplacental insufficiency in women who test positive for antiphospholipid antibodies (6).

The preliminary classification criteria for APS were proposed in 1998 and were updated in 2006 (7, 8). One of the clinical criterion for the diagnosis of APS is pregnancy morbidity characterized by the occurrence of one or more unexplained deaths of a morphologically normal fetus at or beyond the 10th week of gestation, with normal fetal morphology documented by ultrasound or by direct examination of the fetus, or one or more premature births of a morphologically normal neonate before the 34th week of gestation because of eclampsia or severe preeclampsia defined according to standard definitions, or recognized features of placental insufficiency, or three or more unexplained consecutive spontaneous abortions before the 10th week of gestation, with maternal anatomical or hormonal abnormalities and paternal and maternal chromosomal causes excluded. Lupus anticoagulant antibodies, anticardiolipin antibodies and antib2-glycoprotein I antibodies are the most frequently detected subgroups of antiphospholipid antibodies.

However, in the resource poor setting of Sri Lanka, it is not possible to confirm the presence of antibodies in all suspected patients to establish the diagnosis of APS. Furthermore, in most cases, the laboratory tests become negative despite clinical suspicion and clinicians tend to start treatment on clinical grounds for probable APS.

Antithrombotic treatment with aspirin and heparin remains the standard for APS in pregnancy, but the literature on pregnancy outcomes following different regimens of therapy with aspirin and heparin is diverse (9-14).

Furthermore, patients receiving LMWH may be having practical problems and psychological suffering, but there are no studies which assess the impact of the treatment itself on the mental state of these patients. In this research, we plan to describe the pregnancy outcomes of mothers with probable APS and the impact of the treatment on their mental health.

**General objective**

To describe pregnancy outcomes of mothers suspected to be having APS based on clinical criteria and to assess the psychological impact of treatment.

**Specific objectives**

1. To describe and compare the live birth rates among mothers who received different regimens of treatment for probable APS.
2. To describe practical problems, psychological suffering and stigma due to specific treatment among mothers with probable APS.

**Methodology**

**Study design -** A retrospective descriptive study.

**Study Setting** - The study will be conducted at Teaching Hospital Peradeniya. Data will be extracted from clinic records at the Haematology clinic.

**Sampling and sample size -** All mothers who were referred to the Haematology Clinic, Teaching hospital, Peradeniya from the Obstetric Clinic, Teaching Hospital, Peradeniya from July 2016 to October 2020, who are suspected to be having APS, will be selected.

Sample size

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**Inclusion criteria** – All the mothers who fulfill the clinical criteria for APS defined by Sydney Consensus Statement on Investigational Classification Criteria (8).

## Study instruments - Data regarding pregnancy outcomes and specific treatment will be collected through clinic records and bed head tickets.

Assessment of practical problems and the psychological impact will be done using an interviewer administered Likert scale questionnaire, over the phone, which was constructed based on expert opinion. The questionnaire will be piloted on a small group of mothers and the necessary changes will be made.

# Data analysis and result dissemination – Data will be entered in to a Microsoft Excel spreadsheet and will be transferred to and analyzed with SPSS statistical software. Dissemination of study findings will be via presentation of abstracts and publications in peer-reviewed journals, e journals and other publication methods. Results will be available for both medical populations as well as to the general public.

# Ethical Consideration – Permission will be taken from the Director, Teaching Hospital Peradeniya. Ethical approval will be taken from the ethical review committee of the faculty of medicine Peradeniya. All the data will be stored confidentially; which guarantee the information of the subjects will not be disclosed to any third party. Only the investigators will have the access to personal data.

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