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

**Introduction**

Antiphospholipid syndrome (APS) is an autoimmune condition characterized by the presence of antibodies recognizing phospholipid and phospholipid-binding proteins ([1](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1549319/)). Vascular thrombosis and pregnancy complications ([2](https://www.ncbi.nlm.nih.gov/pubmed/8101587)) 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 ([3](https://www.ncbi.nlm.nih.gov/pubmed/9388393)). Recurrent miscarriage is the most common obstetric complication associated with APS and about 10 – 15% women with recurrent miscarriages are diagnosed with APS ([6](https://www.ncbi.nlm.nih.gov/pubmed/8567830), [7](https://www.ncbi.nlm.nih.gov/pubmed/8816614)). In addition, premature delivery can complicate pregnancy due to pregnancy-associated hypertensive disease and uteroplacental insufficiency in women who test positive for antiphospholipid antibodies. (JERROLD S. LEVINE)

The preliminary classification criteria for antiphospholipid which were proposed in 1998 ([4](https://www.ncbi.nlm.nih.gov/pubmed/10403256)) and were updated in 2006 ([5](https://www.ncbi.nlm.nih.gov/pubmed/16420554)), according to which, the diagnosis of APS is based on clinical and laboratory criteria. One of the clinical criterion for the diagnosis of APS is pregnancy morbidity characterized by the occurrence of 1) 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 2) one or more premature births of a morphologically normal neonate before the 34th week of gestation because of: (i) eclampsia or severe preeclampsia defined according to standard definitions, or (ii) recognized features of placental insufficiency, or three or more unexplained consecutive spontaneous abortions before the 10th week of gestation, with maternal anatomic 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. (JERROLD S. LEVINE)

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 regimes of therapy with aspirin and heparin is diverse.( [8](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2125731/), [9](https://www.ncbi.nlm.nih.gov/pubmed/9065133), [10](https://www.ncbi.nlm.nih.gov/pubmed/12220757), [11, [12](https://www.ncbi.nlm.nih.gov/pubmed/11642676), [13](https://www.ncbi.nlm.nih.gov/pubmed/8267038))](https://www.ncbi.nlm.nih.gov/pubmed/19208560)

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. Therefore, this study aims to assess the pregnancy outcomes and psychological impact due to treatment, of mothers who are suspected to be having APS based on clinical criteria.

**Materials and methods**

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 fulfilled clinical criteria for APS, defined by Sydney Consensus Statement on Investigational Classification Criteria were considered eligible.

Details regarding their previous pregnancies and treatment were extracted from clinic records, retrospectively. The collected data included socio-demographics, past obstetric history, medical history, drug history and immunological investigation results, along with the outcome of pregnancy, birthweight and period of gestation. Practical problems and psychological impact due to treatment were assessed using a Likert scale interviewer administered questionnaire.

The collected data were entered in to a computerized database and was analyzed using SPSS …

**Results**

**Discussion**

The effectiveness of therapy with unfractionated heparin (UFH), low molecular weight heparin (LMWH) and low-dose aspirin have been assessed however, the results remain conflicting. Several observational studies have shown that treatment with low dose aspirin alone was associated with significantly improved pregnancy outcomes ([12](https://www.ncbi.nlm.nih.gov/pubmed/11642676), [13](https://www.ncbi.nlm.nih.gov/pubmed/8267038)). With regard to combination therapy, two trials ([8](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2125731/), [9](https://www.ncbi.nlm.nih.gov/pubmed/9065133)) have concluded that treatment with aspirin and heparin (UFH or LMWH) together, leads to a significantly higher rate of live births than that achieved with aspirin alone. A systematic review of randomized or quasi-randomized controlled trials of therapy for pregnancy loss associated with antiphospholipid antibodies, also concluded that combination therapy with aspirin and heparin may reduce pregnancy loss in women with antiphospholipid antibodies by 54%. (Marianne Empson 1)

However, two other randomized trials report that even though a higher success rate was achieved with aspirin treatment, the addition of LMWH did not significantly improve the outcome ([10](https://www.ncbi.nlm.nih.gov/pubmed/12220757), [11)](https://www.ncbi.nlm.nih.gov/pubmed/19208560). Hence, the literature on pregnancy outcomes following different regimes of therapy are diverse.