**Outcome of pregnancy following low molecular weight heparin and aspirin therapy and 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, intra uterine growth retardation, intrauterine death, preeclampsia and maternal thrombosis are some of the clinical manifestations associated with APS ([3](https://www.ncbi.nlm.nih.gov/pubmed/9388393)).

The preliminary classification criteria for antiphospholipid which were proposed in 1998 ([4](https://www.ncbi.nlm.nih.gov/pubmed/10403256)) were updated in 2006 ([5](https://www.ncbi.nlm.nih.gov/pubmed/16420554)) and listed in Table 1

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| Clinical criteria |
| 1. Vascular thrombosis  One or more clinical episodes of arterial, venous, or small vessel thrombosis, in any tissue or organ. Thrombosis must be confirmed by objective validated criteria (i.e. unequivocal findings of appropriate imaging studies or histopathology). For histopathologic confirmation, thrombosis should be present without significant evidence of inflammation in the vessel wall.  2. Pregnancy morbidity  (a) 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  (b) 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  (c) 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. |
| Laboratory criteria |
| 1. Lupus anticoagulant (LA) present in plasma, on two or more occasions at least 12 weeks apart, detected according to the guidelines of the International Society on Thrombosis and Haemostasis (Scientific Subcommittee on LAs/phospholipid-dependent antibodies)  2. Anticardiolipin (aCL) antibody of IgG and/or IgM isotype in serum or plasma, present in medium or high titer (i.e. >40 GPL or MPL, or >the 99th percentile), on two or more occasions, at least 12 weeks apart, measured by a standardized ELISA.  3. Anti-b2 glycoprotein-I antibody of IgG and/or IgM isotype in serum or plasma (in titer >the 99th percentile), present on two or more occasions, at least 12 weeks apart, measured by a standardized ELISA, according to recommended procedures |

Lupus anticoagulant antibodies, anticardiolipin antibodies and antib2-glycoprotein I antibodies are the most frequently detected subgroups of antiphospholipid antibodies. (JERROLD S. LEVINE)

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

Recurrent miscarriage is the most common obstetric complication associated with APS and about 10 – 15% women with recurrent miscarriage are diagnosed with APS ([6](https://www.ncbi.nlm.nih.gov/pubmed/8567830), [7](https://www.ncbi.nlm.nih.gov/pubmed/8816614)). Also 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 effectiveness of therapy with unfractionated heparin (UFH), low molecular weight heparin (LMWH) and low-dose aspirin had been assessed and the results are conflicting. Two trials ([8](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2125731/), [9](https://www.ncbi.nlm.nih.gov/pubmed/9065133)) concluded that treatment with aspirin and heparin leads to a significantly higher rate of live births than that achieved with aspirin alone. Two other randomized trials concluded that even though higher success rate was achieved when aspirin was added for the treatment, 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) . In addition, 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))

A systematic review of Randomized or quasi-randomized controlled trials of therapy for pregnancy loss associated with antiphospholipid antibodies concluded that combination therapy with aspirin and heparin may reduce pregnancy loss in women with antiphospholipid antibodies by 54%. (Marianne Empson 1)

Patients receiving LMWH may be having practical problems and suffering psychologically, but this aspect has not been assessed in previous studies.

This study aims to assess the pregnancy outcome and psychological impact due to treatment of mothers who are suspected to be having APS based on clinical criteria, but are not confirmed with laboratory 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 questionnaire.

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

**Results**

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3279165/#R61>

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