the effect of the current unstable political and economic situation on the subjects, which is undoubtedly an added stress factor. As the subjects in the research were white, predominantly middle-class women, the findings cannot be generalised to other ethnic or socio-economic groups. The study highlights the need for further research in this area, and suggests some of the factors that should be considered.

We would like to thank Dr D. D. Larger and the anonymous referee for their useful comments on a previous draft of this paper.

REFERENCES


The association of antiphospholipid antibodies with severe early-onset pre-eclampsia

J. Moodley, V. Bhoola, J. Duursma, D. Pudifin, S. Byrne, D. G. Kenoyer

Objective. To confirm the association of antiphospholipid antibodies with early onset of severe pre-eclampsia before 30 weeks’ gestation.

Study design. Thirty-four patients with diastolic blood pressure levels \( \geq 110 \) mmHg and at least 2+ proteinuria before the 30th week of pregnancy were randomly chosen for inclusion in the study. Blood samples were taken for assessment of anticardiolipin antibodies (ACAs), lupus anticoagulant, syphilitic serology and antinuclear antibodies. Fifteen normal antenatal patients matched for age, parity and gestational age acted as control subjects.

Results. Four of the 34 women (11.7%) in the study group had elevated levels of both ACAs and lupus anticoagulant, compared with none in the control group. This was not found to be statistically different.

Conclusion. Given the low incidence of positive ACAs in early-onset severe pre-eclampsia it is unlikely that they are implicated in its pathogenesis. It is possible that they represent a small subset of patients with alternative or combined pathology.


Antibodies, in particular those directed at negatively charged phospholipids such as cardiolipin and phosphatidylinositol, have been implicated in placental dysfunction. Several mechanisms have been proposed to explain the association of high titres of antiphospholipid antibodies (APAs) and pregnancy loss. One hypothesis is that these maternal antibodies decrease prostacyclin production by placental tissue, with resultant thrombosis.2 Other possibilities are that antibodies can bind platelet and endothelial cell membranes, affect cell function and promote thrombosis. Because there are similarities in placental pathology in patients with APAs and those with pre-eclampsia, viz.

MRC/UN Pregnancy Hypertension Unit, Faculty of Medicine, University of Natal, Durban.


V. Bhoola, M.B. B.S.

J. Duursma, M.Med. Sc.

D. Pudifin, M.B. Ch.B., F.C.P. (S.A.), F.C.P.

S. Byrne, S.M.L.T.

D. G. Kenoyer, M.D.
microthrombi and infarcts, some authors have suggested an association between pre-eclampsia and antiphospholipid antibodies (ACAs). These reports, however, included many patients on large doses of corticosteroids, a potential cause of hypertension. The purpose of our study was to confirm the association of APAs with severe early-onset pre-eclampsia.

Methods

Following institutional ethical approval and informed consent, 34 patients with severe pre-eclampsia prior to the 30th week of gestation were admitted to the study. All had singleton pregnancies, diastolic blood pressures of 110 mmHg or higher and proteinuria of ++ or more (detected semi-quantitatively by Testape (Ames)). Patients with essential hypertension or on corticosteroid therapy were excluded, as were patients who were seropositive for syphilis and antinuclear factor. ACAs were analysed by a modified enzyme-linked immunoabsorbant assay (ELISA) technique described by Harris. No attempt was made to differentiate between IgG and IgM antibodies; only IgG antibodies were sought. Results were recorded as a positive or negative. ACA-positive patients were defined by the activated partial thromboplastin time (APTT), the 50:50 PTT and the Exner test. LACs were detected by the activated partial thromboplastin time (PTT), the 50:50 PTT and the Exner test. LACs were reported as a positive or negative.

Results

Results are reported as means and the ranges are given. The chi-square test was used to compare differences between groups and, where necessary, Fisher's exact test was used.

Four of the 34 women (11.7%) with early onset of severe pre-eclampsia (study group) had elevated levels of both ACAs and LAC compared with none in the control group. Rajah et al.10 further stated that even Branch et al.8 found ACAs in only 16% of their patients.

Discussion

Conflicting reports4,8 on the association of APAs and pre-eclampsia have been published. Rajah et al.6 and Scott found no significant difference in ACA levels between study and control groups. Rajah et al.10 studied patients in late pregnancy while Branch et al.8 reported that one-third of women with severe pre-eclampsia occurring before 34 weeks' gestation had high titres of ACA. Our study shows that although 4 of 34 women with severe pre-eclampsia, a clinically important proportion (11.7%), had elevated APAs before 30 weeks, statistical significance was not achieved. Reports on studies involving large numbers of patients however also found no differences in APA levels between patients with severe early-onset pre-eclampsia and controls.10 Further, Kilpatrick et al.12 stated that even Branch et al.8 found ACAs in only 16% of their patients.

In the present study, both ACA and LAC levels were assayed, and 4 patients had significantly raised APA levels with elevated titres on both antibody tests. The ACA test is generally accepted as the most sensitive. In addition tests for nuclear antibodies and smooth-muscle antibodies, as well as syphilitic serology, were negative in all patients. Nuclear antibodies were sought by testing patients' sera on

Table I. Clinical data (means and ranges)

<table>
<thead>
<tr>
<th></th>
<th>Study</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of patients</td>
<td>34</td>
<td>15</td>
</tr>
<tr>
<td>Maternal age (yrs)</td>
<td>25.1 (19.34)</td>
<td>24.6 (20 - 28)</td>
</tr>
<tr>
<td>Parity</td>
<td>1.4 (0 - 4)</td>
<td>1.6 (0 - 3)</td>
</tr>
<tr>
<td>Gestational age (wks)</td>
<td>23.9 (15 - 30)</td>
<td>24.4 (16 - 30)</td>
</tr>
</tbody>
</table>

Blood pressure on admission to study

<table>
<thead>
<tr>
<th></th>
<th>Study</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systolic (mmHg)</td>
<td>185.3 (160 - 250)</td>
<td>111.6 (105 - 120)</td>
</tr>
<tr>
<td>Diastolic (mmHg)</td>
<td>128.2 (110 - 160)</td>
<td>66.6 (60 - 80)</td>
</tr>
<tr>
<td>No. of ACA positive</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>No. of LAC positive</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

ACA — antiphospholipid antibodies; LAC — lupus anticoagulant.

Details of the 4 patients with significant APAs are shown in Table II. Two of the patients with APAs delivered premature neonates at 32 weeks' gestation. The other 2 patients had spontaneous intra-uterine deaths. None of the patients in the control group suffered a perinatal loss, while the perinatal loss in the 30 patients in whom APAs were not detected was 70%. Maternal signs of pre-eclampsia regressed within a week of delivery.

Table II. Details of APA-positive patients

<table>
<thead>
<tr>
<th>Patient</th>
<th>Gestational age (wks)</th>
<th>Parity</th>
<th>Blood pressure (mmHg)</th>
<th>ACA index</th>
<th>LAC ratio</th>
<th>Neonatal outcome</th>
<th>Maternal complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>21</td>
<td>3</td>
<td>190/140</td>
<td>2.2</td>
<td>1.49</td>
<td>IUD (450 g)</td>
<td>nil</td>
</tr>
<tr>
<td>14</td>
<td>18</td>
<td>1</td>
<td>180/120</td>
<td>2.5</td>
<td>1.35</td>
<td>Preterm delivery (1 200 g)</td>
<td>Renal damage</td>
</tr>
<tr>
<td>24</td>
<td>28</td>
<td>0</td>
<td>170/110</td>
<td>1.5</td>
<td>1.4</td>
<td>IUD (1 100 g)</td>
<td>HELLP syndrome</td>
</tr>
<tr>
<td>33</td>
<td>26</td>
<td>3</td>
<td>160/120</td>
<td>12.6</td>
<td>2.1</td>
<td>Preterm</td>
<td>Severe uncontrollable hypertension</td>
</tr>
</tbody>
</table>

ACA — antiphospholipid antibody; LAC — lupus anticoagulant; IUD — intra-uterine death; HELLP — haemolysis, elevated liver enzyme levels, low platelet levels
Takayasu's disease and pregnancy

Three case studies and a review of the literature

A. Bassa, D. K. Desai, J. Moodley

Takayasu's disease is commonest in women of childbearing age. Obstetricians are therefore faced with the dilemma of optimal management in pregnancy. This report of 3 cases suggests that Takayasu's disease is associated with a good maternal and fetal outcome. The basic disease appears to be unaffected by pregnancy.

Case reports

Case 1

A 21-year-old primigravida was referred from a community clinic with a diagnosis of 'aproteinuric hypertension' in the 30th week of pregnancy. She was asymptomatic. On examination, all pulses in both upper limbs were absent. The carotid pulses were weakly palpable and all pulses in both lower limbs were present. The popliteal blood pressure was 190/100 mmHg and precordial examination revealed no evidence of established hypertension. There were no abdominal bruits. Funduscopic examination did not reveal proteinuria. On ultrasound examination, both kidneys were normal. Doppler studies of the upper and carotid vessels revealed good collateral circulation. Serological tests for syphilis and rheumatoid factor were negative. The Mantoux test was negative. The ESR was 18 mm/h.

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REFERENCES


Departments of Obstetrics and Gynaecology and Medicine, and MRC/UN Pregnancy Hypertension Unit, University of Natal, Durban

A. Bassa, M.B. B.CH, F.C.O.G.
D. K. Desai, M.B. B.CH, F.C.P.