

The Prevalence of Anticardiolipin and Antisperm Antibodies in Patients with Recurrent Spontaneous Abortion

Dear Editor,

Sixty percent of recurrent spontaneous abortions are unexplained. Recurrent abortion is a globally common problem affecting more than 500,000 women in the United States annually.¹ Recurrent spontaneous abortions may happen due to genetic, anatomic, hormonal, infectious and immunologic causes.² Immunological factors are the most remarkable cause of abortion and the most important ones are antisperm antibody (ASA) and antiphospholipid antibody. The antiphospholipid syndrome (APS) is a multisystem disorder defined as vascular thromboses (venous, arterial, or small vessel) and/or pregnancy morbidity (fetal loss, premature birth, or recurrent embryonic losses) occurring in those with persistent autoantibodies directed against phospholipid-binding plasma proteins (antiphospholipid antibodies). The most common defect in patients with recurrent spontaneous abortion is the hemostatic defect. Although a broad spectrum of antiphospholipid antibodies exists, the universally accepted diagnostic antiphospholipid antibodies tests are lupus anticoagulant (LA), functional coagulation assay, for detection of anticardiolipin antibody and enzyme-linked immunosorbent assay (ELISA). If antiphospholipid antibody evaluation is performed, the most common one is anticardiolipin antibody.¹ If properly screened, it would be the cause to be found in almost all women.¹ Clinical features in conjunction with positive laboratory findings will satisfy the criteria for the diagnosis of anticardiolipin and antisperm antibodies.² Many authors have focused on antiphospholipid syndrome (APS) as a cause of recurrent spontaneous abortion.³

The study populations consisted of 120 patients who referred to the Motahari Hospital (abortion clinic) of Jahrom University of Medical Sciences since February 2006. Patients with a history of 3 or more previous pregnancy losses were included in the study. The etiology of loss was investigated by complete work up such as hormonal assay and infectious studies. As a result, 120 patients had no etiology.

The control group consisted of 50 women with no previous fetal loss, who were matched with the study

group (group II). The age range was 18-39 years. Sera were taken from both groups for antibody measurement by ELISA method (ORGENTEC, Germany). The study was approved by the Ethics Committee of Jahrom University of Medical Sciences.

In group I, the age of the patient ranged between 17-38 years old and the number of previous losses was between 3 and 5. The mean maternal age was 27.2 ± 8.3 years in group I and 25.9 ± 10 years in group II. Analytical tests including the Fisher Exact and t tests were used and *p* values less than 0.05 were considered as significant.

Ten patients (8.5%) in group I and 1 (2%) in group II were positive for anticardiolipin antibody ($p=0.112$). Five patients (4%) in group I were positive for antisperm antibody, while all group II were negative for this antibody ($p=0.244$). There was no patient in group one to be positive for two autoantibodies simultaneously. The prevalence of fetal loss among patients was more in the first trimester. The etiology of loss was investigated by a complete work up such as hormonal assay and infectious diseases (CMV, Rubella, Toxoplasmosis) studies (data are not shown).

There was no significant difference in mean age and parity of the abortion group and the control group.

The present study investigated the possible influences of two autoantibodies in reproductive success or failure. These factors include antiphospholipid and antisperm antibodies. The majority of recent works have focused on this potential autoimmune factors.⁴ It is found that 7-25% of recurrent spontaneous abortions would have antiphospholipid syndrome as the main risk factor.^{2,5}

According to the study of festin *et al.* in 1997, the rate of anticardiolipin antibody was 15% among patients with previous fetal loss of unexplained origin. This antibody is believed to cause thrombosis in the maternal circulation leading to events that lead to fetal losses.^{1,6}

The reports from other investigators show that the prevalence of anticardiolipin antibody in the normal obstetrical population is 1 to 5%, while in the patients with the recurrent pregnancy loss was 20%.³ The

Zolghadri *et al.*⁷ reported that the prevalence of anti-cardiolipin antibody in the normal obstetrical population in Shiraz was 3%, while in the patients with the recurrent pregnancy losses was 11.6%. On the other hand, some investigators do not agree with this result. The report in 1998 showed the lack of association between anticardiolipin antibody and spontaneous abortion.⁸ They believe that although in some reports, the prevalence of antiphospholipid antibodies is higher in patients than control, actually the frequencies are only marginally greater than in the normal population.⁹ A good explanation for different reports may be due to the lack of presence of a standard assay for measuring the antibodies.

Antisperm antibodies has a critical role in pregnancy, while there is an association between antisperm antibody level in women serum and the rate of recurrent spontaneous abortion.¹⁰ Antisperm antibodies are found in up to 9%-12.8% of infertile couples. However, these antibodies are also present in approximately 4% of fertile women. The presence of antisperm antibodies in the fertile population indicates that all antisperm antibodies are not the causes of sterility.¹¹ It is possible that the decrease of suppressor T lymphocytes to be the cause of antisperm antibody production. T suppressor cells may limit the immune response to sperm antigen.¹⁰ Several reports support the association between fetal losses, antiphospholipid and antisperm antibodies.¹²

As a result, we recommend that every patient with a previous history of unexplained fetal losses to be screened for anticardiolipin antibody, although

further studies on larger populations are necessary to prove this matter.

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