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The Level of Preconceptional Peripheral Blood Natural Killer Cells which were Expected to Successful Treatment Outcome using Low-dose Intravenous Gamma Immunoglobulin (IVIg) Infusion in Patients with Recurrent Spontaneous Abortion

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**Background & Objectives:** In this study, we compared the preconceptional peripheral blood NK cells level in successful treatment outcome with that of the treatment failure group and evaluated the level of peripheral NK cells which was expected to successful treatment outcome using our low dose IVIG treatment protocol in patients with RSA.

**Method:** 65 cases of unexplained recurrent miscarriage with elevated peripheral blood NK cells were enrolled in this study from December 2001 to September 2002 at Samsung Cheil Hospital. Peripheral blood immunophenotype assay by flow cytometry was done prior to pregnancy in all patients. After detection of pregnancy by intrauterine gestational sacs on transvaginal sonogram, all patients treated with low dose IVIg infusion (400 mg/Kg/day for 1day, every 4 weeks, until 20 gestational weeks). According to the pregnancy outcome, we compared the peripheral blood immunophenotype assay which had been done prior to pregnancy of successful treatment outcome group (Group I: pregnancy sustained beyond 25 gestational weeks) with that of the treatment failure group (Group II: pregnancy terminated below 25 gestational weeks).

**Results:** 84.0% (55/65) women) had a successful treatment in this study outcome. When we compared several variables such as age, CD56<sup>+</sup> NK cell percentage, CD16<sup>+</sup> NK cell percentage, autoantibody (anti-thyroglobin, antimicrosome, antinuclear, antiphospholipid, lupus anticoagulant, rheumatic) positive rate in successful treatment outcome group (Group I) with those of the treatment failure group (GroupII), the mean age (group I: 29.7±1.5 versus group II: 31.0±3.7), peripheral blood CD16<sup>+</sup> NK cell percentage (group I: 12.2±7.5 versus group II: 14.1±5.6) and autoantibody positive rate (group I: 80%, 8/10 versus group II: 31%, 31/55) were not significantly different (t-test, Chi square test). But, peripheral blood CD56<sup>+</sup> NK cell percentage in the treatment failure group (group II: 26.9±6.8%) was significantly increased than that of the successful treatment outcome group (group I: 22.6±5.5%) (p<0.05, t-test).

**Conclusions:** In RSA patients with elevated NK cells, we suggest that preconceptional peripheral blood CD56<sup>+</sup> NK cell level can be a useful marker for predicting successful treatment outcome of low-dose IVIg infusion. However, for confirm this, more lager scaled study is needed.