

shown to be dependent upon the suppression of T-helper (Th) 1 and T-cytotoxic (Tc)1 cells, which produce interleukin (IL)-2, interferon (IFN)- γ , and tumor necrosis factor (TNF)- β , and the up-regulation of Th2 and Tc2 cells, which produce IL-4, IL-6, IL-10 and IL-13⁽⁵⁻⁸⁾.

Previous investigations of Th1/Th2 immune responses during pregnancy were able to show that a distinct shift towards Th2-type reactions occurs, especially at the fetomaternal interface⁽⁹⁻¹²⁾.

On the other hand, Th1-type cytokine secretion such as IFN- γ and much of the work on spontaneous abortions in humans has focused on the analyses of maternal responses and local changes that occur following abortion. Evidence from studies on murine and human pregnancy points to a strong association between maternal Th2-type (IL-4, IL-6, IL-10) immunity and successful pregnancy on the one hand and between Th1-type (IL-2 and IFN- γ) immune reactivity and pregnancy loss on the other⁽¹³⁾. Moreover, during pregnancy, IL-8 is a CXC chemokine that is produced by a variety of cells, mainly monocytes/macrophages⁽¹⁴⁾. Interleukin (IL-8) has inflammatory and growth-regulating properties^(15,16) but is notable for its selective chemotaxis, degranulation, and activation of neutrophils⁽¹⁷⁾. IL-8 induced activation of neutrophils and elastase activity in the intrauterine environment has been implicated in the mechanisms of rupture of fetal membrane⁽¹⁸⁾, and cervical ripening^(19,20). **Hence in this study we intend to determine the concentrations of IFN- γ , IL-10 and IL-8 in circulation of patients using Enzyme Linked Immuno Sorbent Assay (ELISA) technique.**

Materials and methods

One hundred and nineteen women attending the Obstetrics and

Gynecology department of Al-Kadhimyia Teaching Hospital in Baghdad between December 2004 and August 2005 were the subjects of this study. Included recurrent spontaneous abortion (RSA); non-RSA (first and second abortion) and successful pregnancy (full term) as a control groups.

The gestational age was calculated for each patient from data of the last menstrual period.

These one hundred and nineteen women were grouped into three groups:

Group A: the study group included 62 pregnant ladies all of whom gave a history of previous 3-6 consecutive abortions. History was taken from the patients taking into consideration their hospital records in addition to their previous medical reports (all of them had no family history of genetic disease).

Group B: included 34 pregnant ladies with incomplete abortion for the first time or second time.

Group C: included 23 pregnant ladies had at least two previous normal pregnancies taken as comparison group. All this was done under the supervision of a senior gynecologist

Sample collection: Five ml of venous blood was collected from each patient and control group. The blood was placed in a plain tube and left to stand for one hour at room temperature for clot formation. The tube was centrifuged for 10 minutes at 4 °C at 450 x g for serum collection. The serum was then aspirated by using a Pasteur pipette and dispensed into sterile glass tubes (1 ml in each) and stored at -20 °C until used. The repetitive freezing and thawing of serum sample was avoided.

Enzyme Linked Immuno Sorbent Assay (ELISA) for the detection of IL-10, IFN- γ and IL-8 in serum: