

## Therapeutic Effects of Heparin on Repeated Implantation Failures in IVF Cycles; A Randomized Clinical Trial

Safdarian, Leili (M.D.)<sup>1</sup>; Kheirollahi, Elham\* (M.D.)<sup>1</sup>; Alleyasin, Ashraf (M.D.)<sup>1</sup>; Aghahoseini, Marzieh (M.D.)<sup>1</sup>; Saeidi, Hodjatallah (M.D.)<sup>2</sup>

1. Department of Endocrinology and Infertility, Shariati Hospital, Tehran University of Medical Sciences, Tehran, Iran.

2. Department of Biochemistry, Faculty of Medicine, Tehran University of Medical Sciences, Tehran, Iran.

### Abstract

**Introduction:** Repeated Implantation Failure (RIF) is the main cause of IVF failure. Antiphospholipid syndrome is one of the causes of RIF and heparin is its treatment of choice. It is not clear yet whether heparin could be effective in women with other autoimmune disorders or other causes of IVF failure. Since IVF is the choice procedure for various causes of infertility, its application for the treatment of repeated implantation failures is of critical importance. The purpose of this study was to identify the effects of heparin in women with repeated implantation failures.

**Materials and Methods:** In this randomized clinical trial, 60 women, with two or more unsuccessful IVF cycles, referring to infertility clinic of Shariati Hospital were randomly selected irrespective of their clinical characteristics from 2006 to 2007. Male factors infertility, anatomic, infectious, endocrine, as well as genetic problems had been ruled out in the participants. Women in the treatment group received 5000 IU heparin subcutaneously twice daily, 14 days prior to IVF.

**Results:** Gestational outcomes (Reaching the 30<sup>th</sup> week of gestation) between the two groups were the same. Positive  $\beta$ -hCG tests were seen in 40% and 30% of the intervention and control groups respectively with no significant statistical differences. Amongst the participants, 23.3% and 16.7% of the intervention and control groups reached the 30<sup>th</sup> week of pregnancy, respectively with no significant statistical differences. Women with immunologic or thrombophilic factors had more positive  $\beta$ -hCG tests than those with unexplained causes (58.3% vs. 27.8%) in the intervention group; although the difference was not statistically significant.

**Conclusion:** It seems that administration of heparin has no effects on women with unexplained infertility or repeated IVF failures. Although women with immunologic or thrombophilic factors had more positive  $\beta$ -hCG tests, more extensive trials are warranted in this regard.

**Keywords:** Gestational, Heparin, Immunological disorder, In vitro fertilization, Luteal phase support, Outcome, Repeated implantation failure, Thrombophilia.

\*Corresponding Author: Elham Kheirollahi, Department of Gynecology, Shariati Hospital, North Kargar St., Tehran, Iran.  
E-mail: ekheiorollahi@razi.tums.ac.ir

Received: Jul 5, 2008; Accepted: Nov 12, 2008