

Role of Endometrial Receptivity Array for Implantation failure in In-Vitro Fertilization & Intracytoplasmic Sperm Injection

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Background & Objective:

Assisted reproductive technique is an evolving field with many recent advances. The success rate is low in developing countries where financial concerns prevail predominantly. This study was designed for the first time in any hospital in Pakistan to determine the role of Endometrial Receptivity Array (ERA) in patients with previous implantation failure to improve pregnancy outcome and to enhance the success rate of in-vitro fertilization & intracytoplasmic sperm injection (IVF/ICSI).

Methods:

This study was carried out at the Lahore Institute of Fertility & Endocrinology, Lahore-Pakistan. A total of 16 patients were recruited after taking written informed consent. Only those patients were selected who had previous one or more implantation failures in IVF/ICSI cycles and had at least 2 or more good quality frozen embryos. RNA was obtained from the endometrial sample to check ERA through 238 genes expressed using RNA sequencing. Beta HcG level and scans were performed to confirm the clinical pregnancy

Results:

All enrolled patients had an ERA test and their embryos transferred according to personalized window of implantation (WOI). A total of 5 (31.3 %) patients were stimulated with a long protocol while 11 (68.7%) underwent a short protocol. WOI was receptive in 12 (75%) patients, pre-receptive in 3 (18.2%) and post-receptive in 1 (6.2%), and most of patients showed receptivity at P5 (109-145 hours). Twelve patients (75%) had clinical pregnancy evident by positive beta HCG after embryo transfer. A significant association was found between WOI and receptivity ($P < 0.05$).

Conclusion:

The results of ERA in our study seem promising especially in our patients with previous one or more implantation failures. Although we have limited number of patients keeping in mind its financial constraints especially in developing countries, still ERA is considered a way of hope especially for those patients who have previous implantation failures.