



## DOES TRAVELLING AFTER EMBRYO TRANSFER AFFECTS THE PREGNANCY OUTCOME?

**Kaberi Banerjee**

M.D., Medical Director, Advance Fertility and Gynaecology Centre, New Delhi.

**Bhavana Singla\***

M.D., Advance Fertility and Gynaecology Centre, New Delhi. \*Corresponding Author

**Payal Bajaj**

DGO, Advance Fertility and Gynaecology Centre, New Delhi.

### ABSTRACT

This is first retrospective analysis to determine whether travelling after embryo transfer affects pregnancy outcome. From January to June 2016, 100 infertile females with age till 40 years were evaluated who underwent IVF. We counted females who went back to their own country after 3 days of embryo transfer (Group 1 - 48) and who stayed back in Delhi (Group 2 - 52). The pregnancy rate in females who went back to their country was 60.4 % and who stayed back in Delhi was 40.4% with significant difference. Travelling after 3 days of Embryo transfer will not negatively affect and pregnancy rates was higher in females who went back as they may be more stress free due to more economical, most comfortable life with same cultural habits in their own country.

**Summary:** Patients can safely travel back to their own place after embryo transfer.

**KEYWORDS :** Embryo transfer, pregnancy, travel

### Introduction

The process of in-vitro fertilization (IVF) involves many important steps. Improvements in ovulation induction, oocyte retrieval and laboratory techniques to achieve maximal rates of fertilization and embryo development have resulted in at least one embryo transfer in 90 % of all cases where oocytes have been retrieved (1). Embryo transfer (ET) is the final and most crucial step of IVF. The successful pregnancy outcome is predicted by the implantation of embryo in uterus.

The process of implantation involves two main components, a healthy embryo that should have the potential to implant and a receptive endometrium that should enable implantation. The "cross-talk" between the embryo and the endometrium that finally leads to apposition, attachment and invasion of embryos is mandatory for successful implantation and subsequent normal placentation. [2,3]. Any abnormality attributed to the embryo, the endometrium or the immune system will result in implantation failure. Therefore, travelling per se will not affect any of the above factors responsible for implantation of embryo.

Earlier there were many studies to evaluate the effect of bed rest on pregnancy rates after embryo transfer. This is the first study to compare the pregnancy rates in patients who travelled to their countries with the patients who stayed back in Delhi after embryo transfer.

### Materials and methods

A retrospective analysis was done in 100 infertile females with age till 40 years who underwent IVF from January 2016 to June 2016. They were divided in 2 groups - the females who went back to their own country after 3 days of embryo transfer (48 females - Group 1) and who stayed back in Delhi (52 females - Group 2). The mean patient age, number of embryos transferred (1,2,3,4), grade (a or b), easy or difficult transfer and endometrial thickness are comparable in both the groups.

### Protocol

Ovarian stimulation was started on day 2 with gonadotropins, recombinant human FSH (rhFSH, Follisurge; Intas Pharmaceuticals Ltd, India or Gonal F; Merck Serono S.p.A, Italy) or highly purified menotrophin HMG (hpHMG, Menopur; Ferring GmbH, Germany) in the dose of 225 to 450 IU, depending on patient profile (age, BMI, previous dose of gonadotropins) till day 6 of period followed by transvaginal follicular monitoring and dose was adjusted according to ovarian response. When follicles reached 13 to 14 mm, daily subcutaneous injection of GnRH antagonist, 0.25 mg Cetorelix (Cetrotide, Merck Serono S.p.A, Italy), was added. When follicles

reached 18 mm, 500 mcg recombinant hCG (rhCG, Ovitrelle; Merck Serono S.p.A, Italy) was given to trigger ovulation.

Transvaginal oocyte aspiration was performed before 36 h, under ultrasound guidance, using Wallace OPU needle and Cooks gamete buffer media. Embryos were further cultured in Cooks fertilization/cleavage/blastocyst media.

Embryo transfer was done on Day 2 in all the subjects under transabdominal USG guidance (with full bladder). After gentle insertion of speculum and suction of cervical mucus, soft outer sheath was inserted till the level of internal os. It was followed by insertion of the soft Cooks Guardia Access echotip ET catheter containing embryos in 10 mcl media and 5 mcl air bubble on both sides of the media and then 3 or 4 embryos were placed in mid uterine cavity.

Luteal support was added in the form of vaginal and injectable progesterone. Beta hcg was done after 14 days of the embryo transfer.

(We had not taken the institutional review board (IRB) approval of this study as it was a retrospective study and we collected the data when their pregnancy test was already positive either they stayed or went back to their place).

### Results

The demographic profile for the patients was summarized in Table 1. The embryo transfer parameters were shown in the Table 2. All the parameters related to embryo transfer showed no significant difference in both the groups. The groups were also compared that whether they stayed in Delhi or they went back to their country by flight affected the pregnancy rates or not (Table 3).

### Discussion

In IVF treatments, rest for a varying period of time is commonly recommended after embryo transfer (ET). However, the scientific basis for this practice remains to be determined. In this context we performed this research to investigate whether this advice is sound or not. In our study, the pregnancy rates were higher in females who went back to their own country.

The implantation failure is the reason of IVF failure and mechanical expulsion of the transferred embryo is a possible cause of failure of implantation. This may be the reason why most women are asked to stay in bed for several hours following ET. However, this has never been shown to be related to a higher success rate. Furthermore, an immediate return to routine daily activities, may lead to a decrease

in maternal stress and anxiety following ET (4). There are studies that evaluated the effect of bed rest and mobilization following embryo transfer on the results of in vitro fertilization. Gaikwad S et al studied the influence of 10 minutes of bed rest after ET on the achievement of a live-born infant (LBI) in 240 recipients of IVF with donor eggs which showed that the bed rest immediately after ET has no positive effect and in fact can be negative for the outcome may be due to increase in stress levels (5). Kūçük, M also recommended that the patients should not be encouraged to rest in bed after ET and should maintain their routine physical activities during IVF (6). Li B et al performed a systematic review and concluded that there was insufficient evidence to support the routine use of bed rest to improve pregnancy outcome in women undergoing ET in IVF cycles (7).

A systematic review of the literature was conducted which examined each of the major steps of embryo transfer. In this review, 14 studies were included to assess that the bed rest or ambulation affect IVF pregnancy and live-birth rates and none of them demonstrated a benefit of bed rest after ET of any duration (8).

As we know many studies were done to evaluate the effect of bed rest on pregnancy rates after embryo transfer. This is the first study to compare the pregnancy rates in patients who travelled to their countries with the patients who stayed back after embryo transfer.

### Conclusion

India is a growing destination for medical tourism and people from all over the globe are coming for IVF treatment to our country. We believe that encouraging patients to follow their daily routine immediately after ET or travelling back to their own place may help them to cope with anxiety and they may be more stress free due to more economical, most comfortable life with same cultural habits at their own place.

**Table 1 Demographic profile**

| Parameters                    | Group 1 (Went back) | Group 2 (Stayed) |
|-------------------------------|---------------------|------------------|
| No. of patients               | 48                  | 52               |
| <b>Age (years)</b>            | 29.8                | 30.6             |
| <b>BMI (kg/m<sup>2</sup>)</b> | 20.8                | 21.2             |
| Infertility                   |                     |                  |
| Primary                       | 71.9%               | 70.6%            |
| Secondary                     | 28.1%               | 29.4%            |

**Table 2 Embryo transfer parameters**

| Parameters                   | Group 1 (Went back) | Group 2 (Stayed) | P value    |
|------------------------------|---------------------|------------------|------------|
| No. of embryos transferred   |                     |                  | 0.176 (NS) |
| • 1                          | • 2.1%              | • 2%             |            |
| • 2                          | • 10.4%             | • 11.5%          |            |
| • 3                          | • 44.6%             | • 43.3%          |            |
| • 4                          | • 42.9%             | • 43.2%          |            |
| <b>Grading of embryos</b>    |                     |                  | 1.000 (NS) |
| • A                          | • 93.7%             | • 94.2%          |            |
| • B                          | • 6.3%              | • 5.8%           |            |
| <b>Insertion of catheter</b> |                     |                  | 1.000 (NS) |
| • Easy                       | • 89.6%             | • 90.4%          |            |
| • Difficult                  | • 10.4%             | • 9.6%           |            |
| <b>Endometrial Thickness</b> |                     |                  | 1.000 (NS) |
| • Poor                       | • 2.1%              | • 2%             |            |
| • Good                       | • 97.9%             | • 98%            |            |

**Table 3 Pregnancy rates**

| Parameters | Group 1 (Went back) | Group 2 (Stayed) | P value   |
|------------|---------------------|------------------|-----------|
| Positive   | 29 (60.4%)          | 21 (40.4%)       | 0.045 (S) |
| Negative   | 19 (39.6%)          | 31 (59.6%)       |           |

### References

- (1) Gonen Y, Dirnfeld M, Goldman S, Koifman M, Abramovici H. Does the choice of

catheter for embryo transfer influence the success rate of in-vitro fertilization? Hum Reprod. 1991 Sep;6(8):1092-4.

- (2) Achache H, Revel A. Endometrial receptivity markers, the journey to successful embryo implantation. Hum Reprod Updat. 2006;12:731-46.
- (3) Fukui A, Funamizu A, Yokota M, Yamada K, Nakamura R, Fukuhara R, et al. Uterine and circulating natural killer cells and their roles in women with recurrent pregnancy loss, implantation failure and pre-eclampsia. J Reprod Immunol. 2011;90:105-10.
- (4) Craciunas L, Tsampras N. Bed rest following embryo transfer might negatively affect the outcome of IVF/ICSI: a systematic review and meta-analysis. Human Fertility 2016; 19: 16-22.
- (5) Gaikwad S, Garrido N, Cobo A, Pellicer A, Remohi J. Bed rest after embryo transfer negatively affects in vitro fertilization: a randomized controlled clinical trial. Fertil Steril 2013;100:729-35, Level I.
- (6) Kūçük, M. Bed rest after embryo transfer: is it harmful?. Eur J Obstet Gynecol Reprod Biol. 2013; 167: 123-126.
- (7) Li B, Zhou H, Li W. Bed rest after embryo transfer. European Journal of Obstetrics and Gynecology and Reproductive Biology 2011; 155(2): 125-128.
- (8) Practice Committee of the American Society for Reproductive Medicine. Performing the embryo transfer: a guideline. Fertil Steril. 2017;107:882-896.