

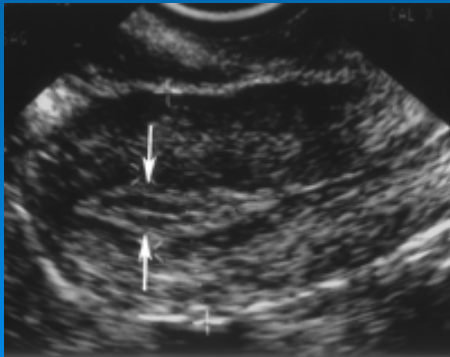
Embryo Transfer Technique Does it really matter??

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Embryo Transfer Technique

Introduction

- Main Factors affecting pregnancy and implantation rates are:
 - Uterine receptivity
 - Embryo quality
 - Transfer efficiency



Embryo Transfer Technique

- ET is the **last** step of critically important procedure of IVF and probably is the **least** successful step in ART treatment cascade.
- It is estimated that 85% of the embryos replaced failed to implant (Mansour 2004) (Baris et al, 2008)

Embryo Transfer Technique

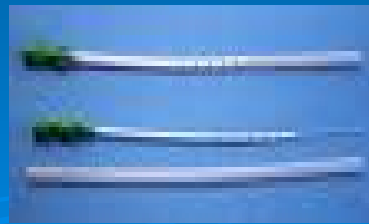
➤ Pre-ET Care

- Careful evaluation of the uterus
- Performing a trial of ET before the actual procedure.
- Removing the cervical mucus
- Flushing cervical canal with culture media
- ET with full bladder
- ET with ultrasound guidance
- Use of Fibrin sealant

Embryo Transfer Technique

➤ ET Procedure Itself:

- Gentle and Atraumatic technique
- Type of catheter (soft / rigid)
- Site of embryo deposition
- Withdrawal of ET catheter
- Day of transfer.



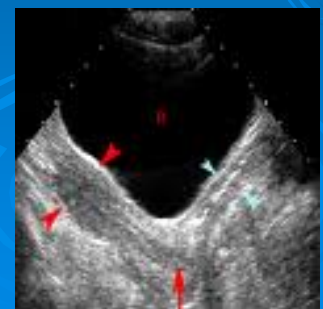
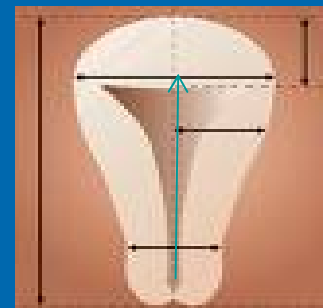
Embryo Transfer Technique

- Post ET Care:
 - Bed rest
 - Use of antibiotics
 - Sexual intercourse

Pre ET Care

Evaluation of Uterine Cavity:

- Length and direction of uterine cavity
- Any abnormalities in entering uterine cavity (cervical fibroid, anatomical distortion, congenital anomalies)
- Degree of cervico-uterine angle (U/S)



Pre ET Care

Performing a trial before the actual procedure

- Dummy ET helps to discover any difficulties
- When to do??

Removing Cervical Mucus

- Does cervical manipulation at the time of embryo transfer cause unwanted uterine contraction?
- How to do it?
- What is the result of various studies??
- RCT's showed significant \uparrow in PR
(Aflatoonian 2005)

Flushing Cervical Canal With Culture Media

- Vigorous flushing of cervical canal before ET Does it really matter?
- RCT → No statistically difference in pregnancy rate (MacNamee et al, 2007)

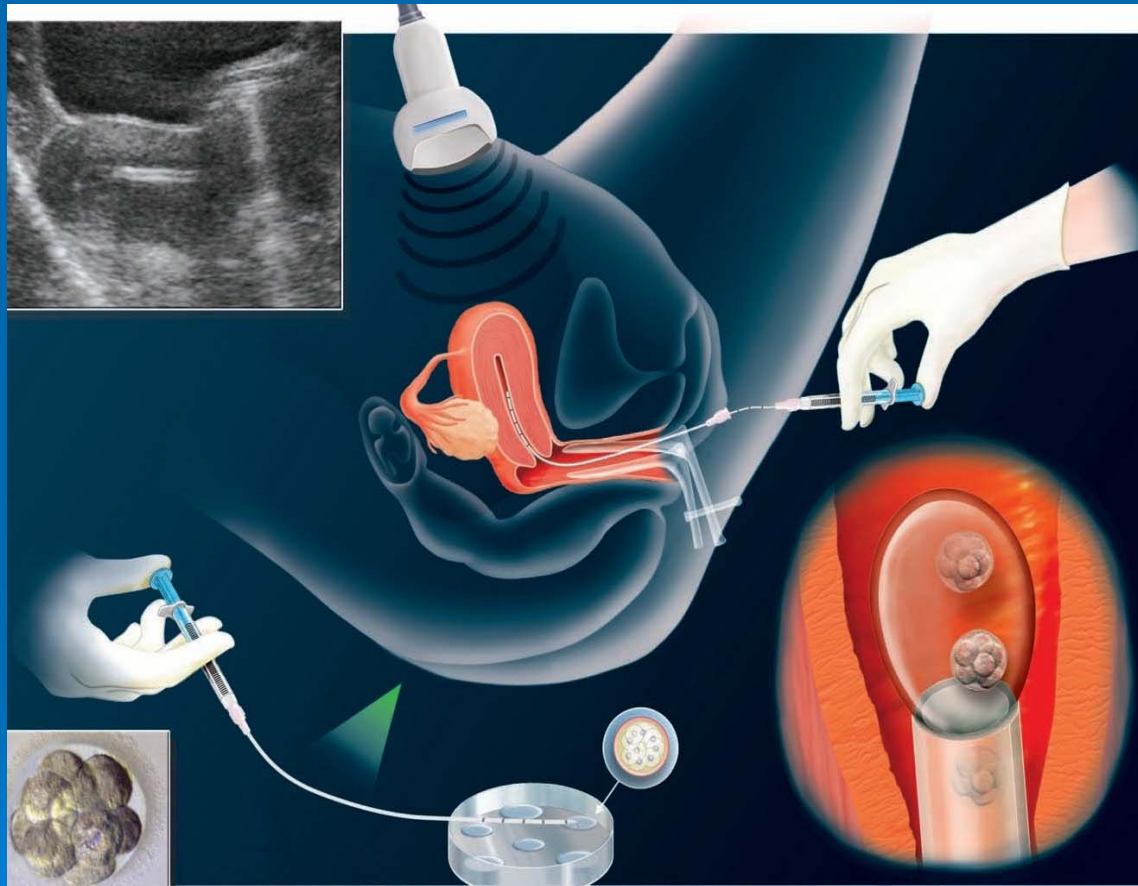
Embryo Transfer With Full Bladder

- ET with a full bladder → straighten the utero – cervical angle
- Evaluation of utero-cervical angle
- This effect being achieved indirectly by performing embryo transfer under U/S guidance.

Embryo Transfer With Ultrasound Guidance

- In the past → Blind transfer
- Policy of U/S – guided mid-uterine cavity ET →
↓ incidence of retained embryos in transfer
catheter.
- Need eye-hand coordination.
- Meta-analysis of RCT → significant increase in
pregnancy rate (Bukett, 2003) but ...
- Kosmas 2007 → RCS → Ultrasound
guidance ET does not offer any benefits in
clinical outcome.

Embryo Transfer With Ultrasound Guidance



Use of Fibrin Sealant

- It has been suggested that adding a Fibrin Sealant (glue) to the culture medium during ET could improve pregnancy rate.



Embryo Transfer Technique

Gentle and Atraumatic Technique

- Difficult ET → low pregnancy rate
- Gentle and atraumatic technique is necessary for successful outcome
- Prevention of uterine contraction
 - Use of tenaculum
 - Use of progesterone on the day of OPU
 - Meta-analysis of RCT (Frydman 2004)
 - Place of trans-myometrial surgical ET

Type of ET catheter

- The benefit of one catheter over another is controversial !
- Soft catheter can be misleading ...How??
- Meta-analysis of RCT → No significant difference between soft or rigid catheter (Mellveen 2005) but ...
- A total of 23 RCT → significant higher pregnancy rate using soft catheter as compared to firm catheter (Aboulghar et al, 2005)

Site of Embryo Deposition

- When to deposit ?
- Risk of ectopic pregnancy
- Deposition 2 cm below the uterine fundus is associated with higher pregnancy rate (RCT Mansour 2002, Barri O 2006)
- Mechanical Pressure on Portiovaginalis of the cervix to minimize embryo expulsion

Withdrawal of ET Catheter

- Is there any difference in pregnancy rate if the catheter withdrawn immediately after ET → No difference
- (RCT: Martinez 2001)

Embryo Transfer Technique

- Post ET Care
- Bed Rest 24 Hours
20 minutes
- Use of antibiotics ??
- Sexual intercourse around the time of E.T.

CONCLUSION

Pregnancy rate could be significantly increased with the following procedures and precautions:

1. Trial transfer
2. Removal of cervical mucus
3. Gentle and atraumatic technique including avoiding touching the fundus
4. Ultrasound – guided ET with full bladder
5. Deposition of the embryo 2 cm below the uterine fundus.

THANK YOU

