**Anesthesia for ART Procedures**

In Vitro Fertilization (IVF) is increasingly being practiced in different parts of the world. Anesthesiologist are faced with peculiar challenges to follow an anesthetic technique that allays patient anxiety with adequate pain relief and yet avoiding any deleterious effect on outcome of successful pregnancy.

Variety of anesthetic technique have been used. No method could be considered as superior to other technique if basic concept pertaining to IVF are taken care.

The aim of each individual involved in IVF varies. The patient wants comfort and safety and the gynecologist aim is to harvest maximum Oocytes and anesthesiologist try to use drugs which are short acting, minimal side effects to Oocyte and little penetration into follicle.

**Anesthesia to IVF procedures**

A specialized sub speciality because subtle differences affect fertility rates and vigilant to the impact of anesthetic agents on success of assisted conception.

**Common ART procedures needs Anesthesia**

- Oocyte Retrieval
- Embryo Transfer
- Testicular Biopsy

**Goal of the Anesthetist**

- Minimal impact on embryogenesis, fertilizations and cleavage of oocyte.
- Minimal post operative vomiting, sedation and pain.
- No psychomotor impairment so that improvement in fertility rates are achieved.

**Physiological changes in ART patients**

Albumin and alpha 1 acid glycoprotein decreases with hormonal manipulation which result in decrease in drug binding and greater concentration of free drug. There is changes in plasma estradiol levels and estrogen levels result in increase emesis. Selection of drugs doses, combinations and timing of exposure alter results.

**Oocyte Retrieval**

In early period oocyte retrieval was done with laparoscopy. CO2 pneumoperitoneum decreases follicular fluid PH and oocyte fertilization rates. Hence that practiced was abandoned. Now only trans vaginal aspiration using ultrasound guidance have been practiced.

**Anesthetic Technique in Oocyte Retrieval**

- Paracervical block
- Spinal / Epidural Anesthesia
- General Anesthesia
  - TIVA
  - with inhalational agents
- Conscious Sedation
**Paracervical Block**

It is a cumbersome procedure needs patient cooperation. Blocks cover only the vaginal and not ovarian wall. Always combined with sedation – pethidine IM / IV

**Spinal / Epidural**

Has long recovery time so not ideal for day care procedures. Strict hemodynamic monitoring needed. Many times technical difficulties to perform. Common combination is lidocaine with fentanyl. Not routinely practiced nowadays.

**Conscious Sedation**

Needs patient's cooperation, most of the patients are very anxious and psychologically depressed. Conscious sedation allows the patient to move at critical times. Dose required may involve loss of consciousness which may result in prolonged recovery and room stay.

**Technique of Choice**

General Anesthesia – total intravenous anesthesia with propofol (Titrated), fentanyl (50-100 µg) with midazolam 1-2mg with spontaneous / assisted mask ventilation via high flow oxygen mask.

**Anesthesia for Embryo Transfer**

Many centers are doing ET without anesthesia. Some of the patients are very anxious and non cooperative. They need general anesthesia – TIVA.

**Anesthesia for Testicular Biopsy**

Ideal technique will be cord block using 1% xylocaine plain or 0.25% sensorcaine.

**Criteria for Discharge**

Most of the procedures are done as day care. Before discharge patient must be hemodynamically stable, able to take and retain oral liquids, ambulate and void urine prior to discharge.

**Conclusion**

The impact of anesthetic agent on gametes need to be continuously revisited. Anesthesiologist should be vigilant to the potential impact of anesthetic agent on the success of ART as subtle difference will affect fertility rates.