



Learning schedule for Mr. Ravindra N. Kumar

From 18.09.2009-26.09.2009

I. Embryology

Seminar: Physiology of Gametes, Syngamy and early stages of embryos recovery, Washing, Qualifying of Oocyte-cumulus- complexes

Showing of different Handling techniques for embryos and and Oocytes, Showing classical IVF

- Unopette
- Biomedical Instruments
- Cook Stripper
- Swemed Stripper
- Fire polished Pasteurpipette

Using of different Techniques of Handling

Training of transferring female gametes in different culture systems.

II. Cryopreservation

Seminar: Basics of Cryopreservation and mechanism of freezing and freezing substances, Biochemistry and behaviour of cryopreserved cells.

Presenting of different tools for Cryopreservation and freezing protocols

- LCU
- CTE
- Consartic

Using different tools for different cells with protocols and techniques

Straws, Vials)

- Oocytes
- Sperm
- PN-Stages
- Embryos
- Ejaculate
- TESE Biopsy
- MESA Samples
- Ovarian biopsies

### III. ICSI

Meaning of Intracytoplasmic sperm injection (ICSI) and Importance of IVF

Presentation of different manipulation systems and pipette types

- Eppendorf
- Luigs&Neumann

### IV. ICSI

basics of manipulation, Adjustment of pipettes, basic -knowledge

Manipulation, way to prepare dishes.

Oocyte and sperm preparation for ICSI

Preparation of ICSI, hands on training ICSI at least over 73 hours

## V. IMSI = cyto screen and polar Aide

Seminar: Importance and use of IMSI

Technology , understanding and results of new methods in assisted reproduction

## VI. Polar body biopsy

Seminar: Basics of genetic analysis of FISH samples, meaning and

explanation of results of 1st and 2nd polar body of oocytes. Genetic diseases.

adjustment of biopsy pipettes and manipulator, theorie of biopsy and preparation of FISH

Extraction of polar bodies of animal oocytes and preparation of FISH

## VII. Blastomere biopsy

Seminar: Basics of genetic analysis of FISH Samples and meaning

regarding genetic diseases. Use of Blastomere in other countries without restriction because of embryo laws.

Use of Laser and extraction of Blastomeres and preparation for FISH.

Training of extraction of Blastomeres and polar bodies, transferring and handling.

## IX. FISH-Technique

Seminar: Basics of Fish technique,

Preparation of Samples

Analyses of FISH samples, meaning and discussion of results, animation through pictures

## X. Quality management in human IVF lab, collecting Data and protocols.

Seminar: Basics of quality control in IVF laboratories

recording different working areas

Recording of section points in a IVF laboratory

Recording IVF Protocols

- Stimulation
- Egg collection
- Spermogramm
- Sperm preparation
- PN control
- Embryoscoreing
- Embryotransfer
- Cryoprsvervation
- Assisted hatching

Seminar basics of Embryo law in Germany

Discussion of all possible methods of assisted reproduction in

comparance to the usefulness of the methods in harmon with moral and ethic criterias

#### XI. In vitro Maturation, Vitrification, Blastocyste culture

Seminar: State of the art, benefit and examples out of routine

Finding GV oocytes and preparation of media

Performing Vitrification of oocytes and thawing procedure as well

performance of blastocyst culture under different

restrictions, Blastocyst grading

## XII. Maintainance and callibrating of equipement in IVF Lab, recording data and documentation

### Discussion of equipement I

- Inkubators
- Heating stages
- Manipulators

### Discussion of equipement II

- Sterilisation
- Autoklave
- Ultrasound
- Cryopresercation

## XIII. Trouble Shooting in human IVF labaratory, emergency plans

### Working out of sensitive switch points in human IVF labs (Examples)

- How to mark dishes and samples
- Organization
- Water and electricity
- Protection of data privacy
- Protection of patients

### Working out emergency plans

- Power failure
- Water flow
- Failure of gas
- Mistake
- No ET possible

## XIV. Certificate

Handle out certificate and congratulation procedure