Biobanking the first collection of oviductal and uterine fluid from hysterectomised patients

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INTRODUCTION

The safety of procedures in assisted reproductive technologies (ART) in humans and the effect of culture conditions on embryo and fetal development is raising a great deal of concerns, especially because there is a lack of information about the formulations of commercially available culture media used in IVF/ICSI treatments. It was already described that the different IVF culture media influence the rates of successful implantation, pregnancy and birth weights (Kleijkers et al,2016). Furthermore, culture media supplemented with natural female reproductive fluids have improved IVF efficiency, morphological embryo quality and epigenetic reprogramming profiles in pig blastocysts, compared with culture media without these supplements (Canovas, et al, 2017). This has encouraged the development of strategies that allow a noninvasive collection of reproductive fluids in humans, in order to validate them as supplements in the future.

STUDY POPULATION

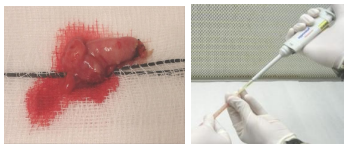
"Virgen de la Arrixaca" University Clinical Hospital

- ✓33 volunteer premenopausal women (Informed consent)
- ✓Between 35 and 50 years old
- ✓Total abdominal hysterectomy
- ✓Benign uterine pathology

DEVELOPMENT OF THE COLLECTION METHOD

A. OVIDUCTAL FLUID

- Carrasco et al. 2008
- Oviducts separated from the tracts
- Dissection on ice
- Aspiration with an automatic pipette



Extracted Fallopian Tube. Aspiration with an automatic pipette

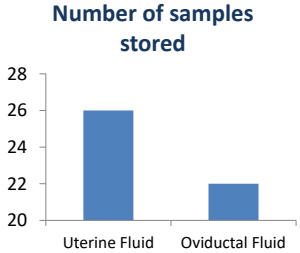
B. UTERINE FLUID

- Mucat® (CDD Laboratoires)
- Insertion of the device inside the extracted uterus, through cervix
- Aspiration with the integrated plunger, without a syringe.

Mucat device. Aspiration of uterine fluid with the integrated plunger

BIOBANKING at –80 °C in BIOBANC-MUR - IMIB

The supernatant immediately stored at –80 °C in aliquots



Directive 2004/23 / EC of the European Parliament and of the Council of 31 March 2004
Law 14/2007, of July 3, Biomedical Research of Royal Decree 1716/2011, of November 18.

OBJECTIVES

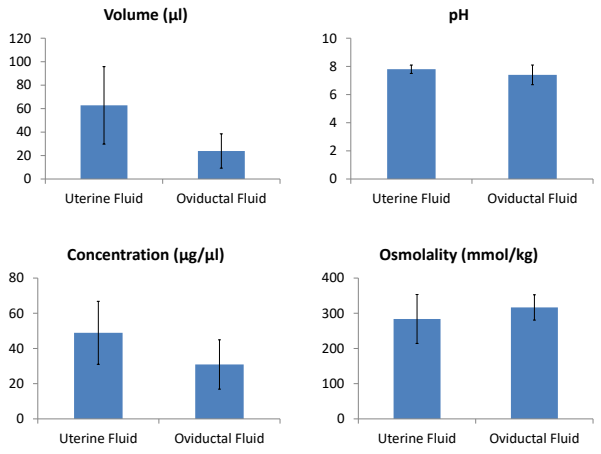
1. The first objective of this study was the development of a method to collect human oviductal and uterine fluids.
2. A second objective consisted of the initial characterization of reproductive fluids by measuring volume, protein concentration, osmolality and pH

SAMPLES CHARACTERIZATION

- **Osmolality -** Wescor Vapro 5520 Vapor Pressure Osmometer
- **Protein Concentration** - Bradford Reagent, Sigma
- **pH** - pH OxyMini FOR PRESENS, Germany

pH OxyMini FOR PRESENS, Germany

Wescor Vapro 5520 Vapor Pressure Osmometer



CONCLUSIONS

Although the selected methods allowed the reproductive fluids collection, they should be improved in order to obtain higher volumes without endometrial damage, to perform clinical trials that could validate their use as a supplement in culture media for ART

Besides the volume limitations, we can conclude that it is possible to establish a biobank of reproductive fluids which meets sanitary conditions and legal requirements for research and future medical applications.

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