37th ANNUAL MEETING

Worlwide

26 June - 1 July 2021

ESHRE VIRTUAL

European Society of Human Reproduction and Embryology

INSTITUTO BERNABEU AT THE ESHRE 2021

Research works accepted at the
European **S**ociety of **H**uman **R**eproduction **A**nnual **M**eeting

INSTITUTO BERNABEU
AT THE **ESHRE**

Research gives us life.

At Instituto Bernabeu, research gives us life. Our work as medical practitioners is a priority, as are our research activities the objective of which is to improve from day to day and implement all the scientific improvements for our patients. Reproductive medicine is making great strides forward every day and Instituto Bernabeu group is at the forefront.

For this reason we always attend the most important conference of the year in the field with the presentation of projects and where attendance is so significant and relevant. We are at the European Society of Human Reproduction (ESHRE) conference excited to keep on learning and proud to add our own grain of sand with research into infertility, endocrinology, genetics, the biology of reproduction and gynaecology.

INDEX

TIMETABLE

ORAL PRESENTATIONS:

1

Application of machine learning to predict aneuploidy and mosaicism in embryos from in vitro fertilization (IVF) cycles
J.A. Ortiz, R. Morales, B. Lledó, E. García-Hernández, A. Cascales, J.A. Vicente, J. González, J. Ten, A. Bernabeu, J. Llácer, R. Bernabeu.

Session title: Session 71: Aneuploidy and mosaic ART - **Session type:** Selected oral communications - **Presentation number:** O-203

2

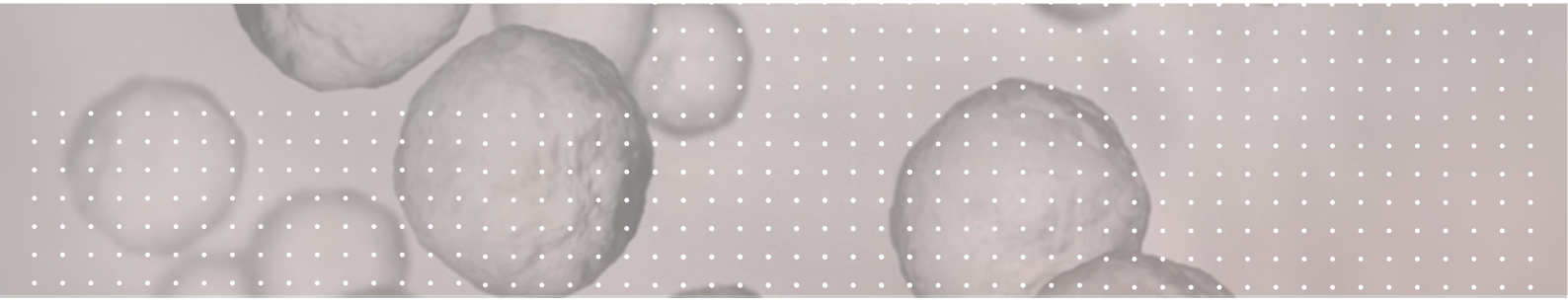
Characterization of vaginal and endometrial microbiome in patients with chronic endometritis (CE).
F.M. Lozano, A. Bernabeu, B. Lledó, R. Morales, F.I. Aranda, J. Llácer, R. Bernabeu.

Session title: Session 46: Current challenges in uterine disorders - **Session type:** Selected oral communications - **Presentation number:** O-143

3

Impact of female chromosomal polymorphic variants on ovarian reserve markers and fertility treatments prognosis
L. Luque, N. Ruiz, Á. Linares, J. Bartolomé, J.A. Ortiz, A. Fabregat, E. García-Hernández, J. Ten, R. Bernabeu.

Session title: Session 57: The ART of managing low ovarian reserve - too little too late? - **Session type:** Selected oral communications - **Presentation number:** 0-175



POSTER PRESENTATIONS:

4

POSTER - Fresh vs frozen PGT-A cycles in donor oocyte recipients.
J.C. Castillo, J. Guerrero, J. Ten, M. Martínez; J. Llácer, A. Bernabeu, R. Bernabeu.

5

POSTER - Uterine vascularity in women with previous caesarean section and its potential role in implantation failure: a retrospective cohort study.
B. Moliner, J. Llacer, J.C. Castillo, P. Cirillo, A. Fuentes, A. Bernabeu, R. Bernabeu.

6 POSTER - Exome sequencing and preimplantation genetic testing for unexplained recurrent fetal malformations.
E. García - Hernandez, R. Morales, B. Lledó, J.A. Ortiz, A. Turienzo, F. Lozano, A. Fuentes, J. Llácer, A. Bernabeu, R. Bernabeu.

7 POSTER - Clinical outcomes of mosaic embryos are similar between young and older women.
A. Cascales, R. Morales, B. Lledó, J.A. Ortiz, J. Guerrero, J. Llácer, R. Bernabeu.

8 POSTER - Low serum progesterone on the day of frozen embryo transfer after artificial endometrial preparation: exploring the clinical impact of "rescue" strategies.
A. Herencia, J. Llácer, J.A. Ortiz, J. Castillo, C. Gavilán, B. Moliner, A. Bernabeu, R. Bernabeu.

9 POSTER - Identification of novel variants and candidate genes in women with family premature ovarian failure using whole-exome sequencing.
R. Morales, B. Lledó, J.A. Ortiz, F. Lozano, A. Bernabeu, A. Fuentes, J. Llácer, R. Bernabeu.

10 POSTER - Poor ovarian response is associated with IL-6/IL-10 ratio in women undergoing in-vitro fertilization.
A. Fabregat, M. Hortal, B. Lledó, J.A. Ortiz, B. Moliner, A. Bernabeu, J. Llácer, R. Bernabeu.

11 POSTER - Clinical relevance of re-expansion after blastocyst thawing.
M. Aparicio, L. Herrero, L. Cascales, J. Llácer, J. Ten, R. Bernabeu.

12 POSTER - Laser-assisted collapse of blastocysts prior to vitrification improves clinical outcomes.
J. Ten, J. Guerrero, A. Rodríguez-Arnedo, L. Martí, M. Herreros, N. Díaz, R. Sellers, M.C. Tió, A. Bernabeu, J. Llácer, R. Bernabeu.

13 POSTER - Progesterone levels and clinical outcomes using a single pessary of 400 mg of vaginal progesterone in artificial cycles for embryo transfer.
R. Morales, B. Lledó, J.A. Ortiz, F. Lozano, L. Cascales, L. Herrero, J. Llácer, R. Bernabeu.

14 POSTER - A feasible diagnostic approach for the cryptic subtelomeric traslocations in early recurrent miscarriage patients by preimplantation genetic testing (PGT).
B. Lledó, R. Morales, J.A. Ortiz, A. Cascales, A. Fabregat, J. Ten, B. Moliner, A. Fuentes, A. Bernabeu, J. Llácer, R. Bernabeu.

15 POSTER - Follicle-stimulating hormone receptor genotype and its influence on the results of double ovarian stimulation in IVF cycles.
M. Hortal, B. Lledó, J.A. Ortiz, A. Fuentes, A. Cascales, F.M. Lozano, A. Bernabeu, J. Llácer, R. Bernabeu.

16 POSTER - Birthweight is not affected by freezing process. Results from a quasi-experimental study using the Oocyte Donation Model.
N. Díaz, J. Llácer, E. Álvarez, E. Serrano, J.A. Ortiz, A. Bernabeu, J. Ten, R. Bernabeu.

1

ORAL PRESENTATION

Application of machine learning to predict aneuploidy and mosaicism in embryos from in vitro fertilization (IVF) cycles

J.A. Ortiz, R. Morales, B. Lledó, E. García-Hernández, A. Cascales, J.A. Vicente, J. González, J. Ten, A. Bernabeu, J. Llácer, R. Bernabeu.

Machine learning algorithms are increasingly being applied in medicine. These models are assisting clinicians in diagnosing and optimizing treatments in countless areas of medicine.
Human fertility is no stranger to this phenomenon. Assisted reproductive techniques generate a large number of data, which makes them a perfect target for the application of different artificial intelligence algorithms.
Within human fertility, the selection of a chromosomally normal (euploid) embryo is extremely important.

The objective of the project was to create a model to be able to predict aneuploidies and embryonic mosaicism and to know a priori the possibilities of achieving a chromosomally normal embryo in the IVF cycle.
This research work has been accepted as oral communication at the European Society for Human Fertility (ESHRE) Congress to be held between June 26 and July 1.

During the study, 22 variables (maternal, paternal, embryonic and of the IVF cycle) were recorded from 6,989 embryos obtained in 2,476 cycles (January 2013-December 2020).
Finally, two predictive machine learning models were established, one for aneuploidies and the other for mosaicism.

These models can be used by the gynaecologist as a tool to personalize the patient's treatment to maximize the chances of achieving an euploid embryo, a chromosomally normal embryo with a high probability of leading to an evolutionary pregnancy.

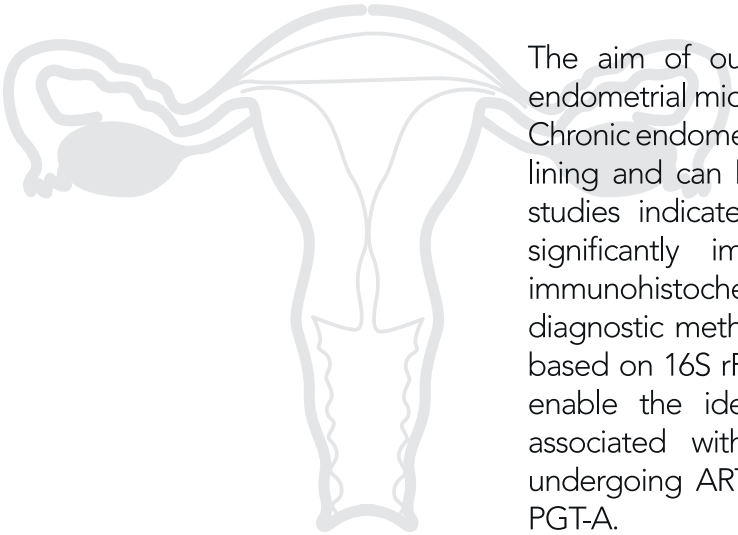
INSTITUTO BERNABEU

2

ORAL PRESENTATION

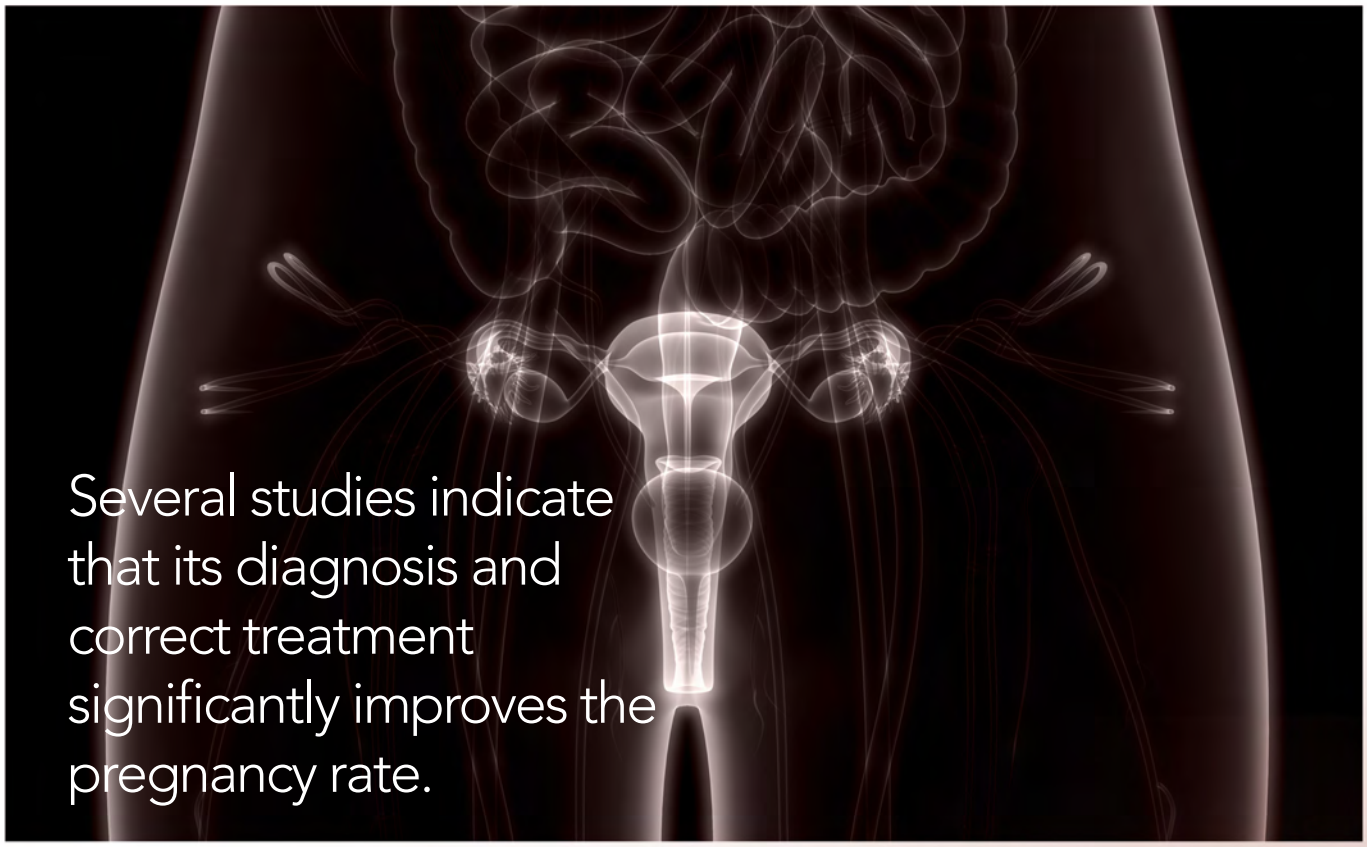
Characterization of vaginal and endometrial microbiome in patients with chronic endometritis (CE).

F.M. Lozano, A. Bernabeu, B. Lledó, R. Morales, F.I. Aranda, J. Llácer, R. Bernabeu.



The aim of our study was to know if the vaginal and endometrial microbiome can be a diagnostic method for CE. Chronic endometritis is an inflammation of the endometrium's lining and can be a cause for implantation failure. Several studies indicate that its diagnosis and correct treatment significantly improves the pregnancy rate. Currently, immunohistochemistry CD138 marker is most common diagnostic method for CE. Nowadays, Microbiome analysis based on 16S rRNA gene sequencing is a fast tool that can enable the identification of pathogenic microorganisms associated with CE. Cohort study with sixty patients undergoing ART with their own or donated gametes and PGT-A.

In this research, we have analysed vaginal and endometrial microbiome through massive sequencing and it shows an abnormal endometrial and vaginal microbiome in CE patients. We detected different communities of bacteria when vaginal and endometrial samples were analyzed in patients diagnosed with or without CE. The microbiome pattern of samples from women with CE was not dominated by Lactobacillus spp., the main bacteria at vaginal and endometrial level and acts as a barrier against pathogens. This way, we have found that there's a characteristic pattern in vaginal and endometrial microbiota of CE patients.



INSTITUTO BERNABEU

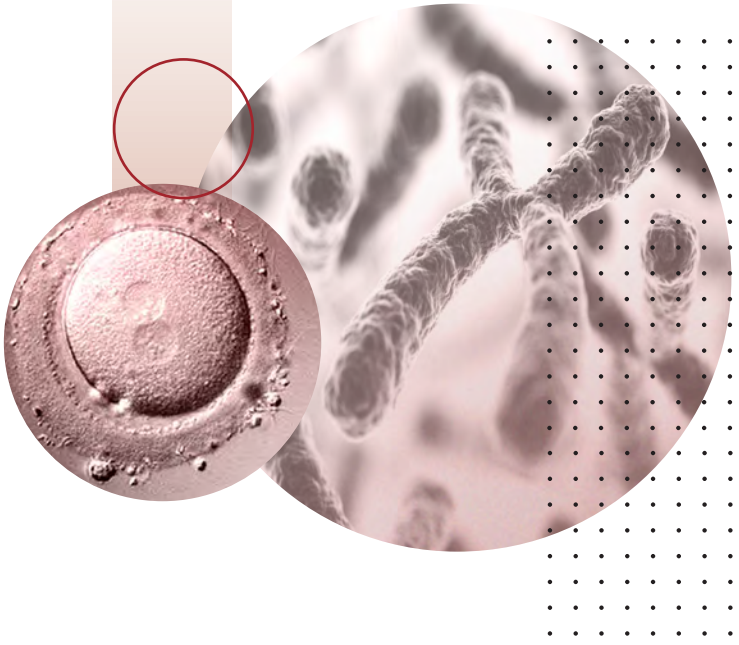
3

ORAL PRESENTATION

Impact of female chromosomal polymorphic variants on ovarian reserve markers and fertility treatments prognosis

L. Luque, N. Ruiz, Á. Linares, J. Bartolomé, J.A. Ortiz, A. Fabregat, E. García-Hernández, J. Ten, R. Bernabeu.

Polymorphic chromosomal variants or chromosomal polymorphisms are variations in a particular place in DNA which, in essence, provide the genomic variety of a species. Historically recognized as "harmless", without clinical expression or effects. By definition, to be considered this way, the detection of each variant must be greater than 1% of the population.
The prevalence of polymorphisms is higher in population with reproductive problems compared to that of the general population. Historically there is a controversy about its impact on fertility.



We present the results of a study conducted in women undergoing assisted reproduction treatment comparing two groups, women with polymorphic variants versus women without variants, and we compare the results of ovarian reserve markers and treatment prognosis between both groups.
The results revealed that women carrying the polymorphism have a lower level of anti-Müllerian hormone and a lower survival rate after thawing of previously cryopreserved eggs.
This information can be a useful tool when advising patients prior to fertility treatment and to provide more personalized information on their reproductive prognosis.

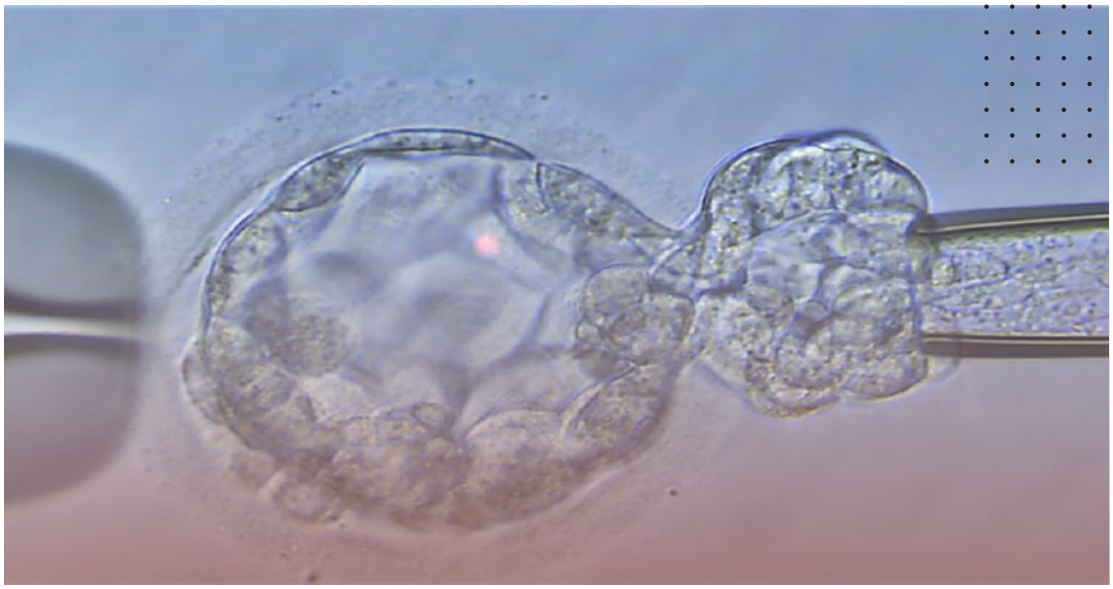
4

POSTER

Fresh vs frozen PGT-A cycles in donor oocyte recipients

J.C. Castillo, J. Guerrero, J. Ten, M. Martínez, J. Llácer, A. Bernabeu, R. Bernabeu.

A recent study reported that among donor oocyte recipients, fresh embryos were associated with better clinical outcomes when compared with frozen embryos. This finding contrast with data from autologous oocytes. Since embryo quality at embryo transfer (ET) may introduce a significant confounder, the additional analysis of recipients receiving only euploid embryos may add important information on the subject. After the analysis of over three hundred PGT-A IVF-cycles of women using donor oocytes resulting in fresh blastocyst ET compared to the first frozen blastocyst ET from freeze-all cycles in our center, we concluded that when PGT-A analysis is deemed to be necessary in oocyte recipients, cryopreservation may have an adverse impact on IVF outcomes. Future studies exploring ET in natural vs artificial cycles are warranted to further isolate the impact of vitrification and the uterine environment on IVF outcomes.

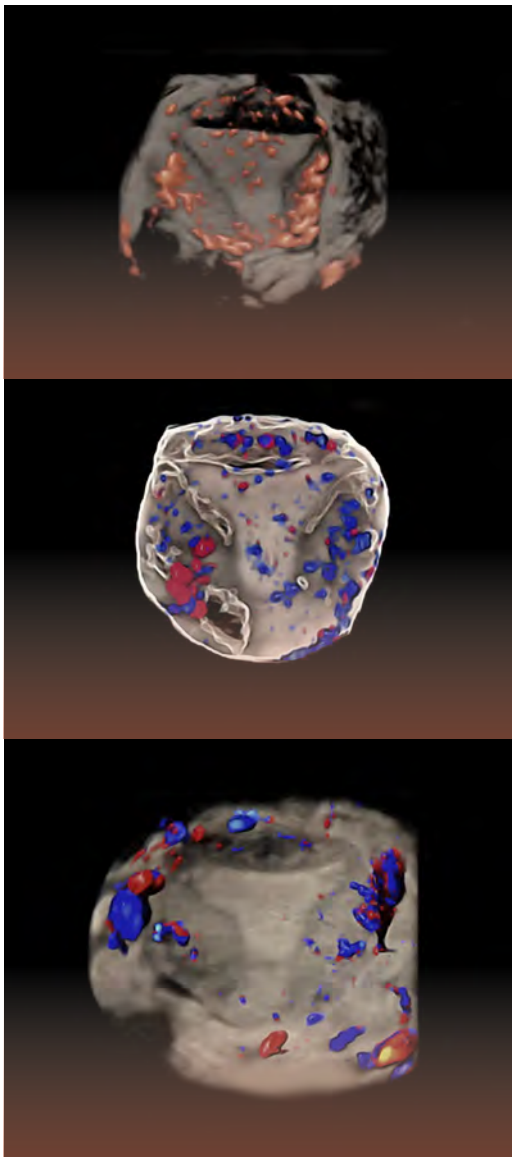


5

POSTER

Uterine vascularity in women with previous caesarean section and its potential role in implantation failure: a retrospective cohort study

B. Moliner, J. Llacer, J.C. Castillo, P. Cirillo, A. Fuentes, A. Bernabeu, R. Bernabeu



A recent study has shown that previous caesarean section impairs live birth rates after assisted reproductive treatment (ART). In addition, hypotheses have been formulated about how this fact may decrease these rates of clinical pregnancy. One of the hypothetical processes mentioned has been a distorted contractility of the uterus caused by fibrosis, which can influence the vascularization of the endometrium. For this reason, a study has been carried out in which the parameters of uterine contractility and vascularization in 3D ultrasound have been analysed in women who underwent an embryo transfer. As a result, lower 3D vascularization markers and lower uterine contractility have been obtained, which would support the hypothetical mechanism described with a deterioration of perfusion related to caesarean section.

6

POSTER

Exome sequencing and preimplantation genetic testing for unexplained recurrent fetal malformations

E. García - Hernandez, R. Morales, B. Lledó, J.A. Ortiz, A. Turienzo, F. Lozano, A. Fuentes, J. Llácer, A. Bernabeu, R. Bernabeu.

Foetal malformations account for approximately 3% of live births and causes include: chromosomal abnormalities, exposure to toxic substances or teratogens and infections. Recently, studies have shown that several monogenic diseases are linked to foetal abnormalities. Exome sequencing is widely used to detect genetic mutations and has emerged as a useful tool for finding the genetic cause of foetal abnormalities. Therefore, the aim of this study was to show how exome sequencing in patients suffering unexplained recurrent foetal malformations in combination to PGT-M could lead to a successful healthy new-born.

For this purpose, we studied a non-consanguineous couple with unexplained, recurrent foetal malformations. The couple had two malformed foetuses with the same congenital abnormalities: hydrocephalus, cerebellar vermis agenesis, cerebellar hypoplasia and enlarged cisterna magna. Exome sequencing was performed using TrusightOne (Illumina®).

An homozygous novel pathogenic mutation c.641 C>T (p.Ala214Val) in FVLCR2 gene was found. The parents were heterozygous carriers revealing that the detected variant follow an autosomal recessive pattern. Mutations in this gene are related to foetal central nervous system defects. This disorder is diagnosed prenatally and is lethal. PGT-M were used to select a healthy embryo and healthy baby was born. Exome sequencing in combination with PGT-M, can help couples with recurrent foetal malformations to have healthy new-borns.

7

POSTER

Clinical outcomes of mosaic embryos are similar between young and older women

A. Cascales, R. Morales, B. Lledó, J.A. Ortiz, J. Guerrero, J. Llácer, R. Bernabeu.

Chromosomal abnormalities are common in the analyzed embryos for preimplantation genetic testing for aneuploidy (PGT-A) cycles. Mosaicism (the presence of two or more chromosomally distinct cell lines) is a usual event in embryos derived from IVF cycles.
Several studies show that mosaic embryos have a reduced potential to reach term, compared to euploid embryos. The factors affecting development and implantation potential of mosaic embryos are controversial.
This study main objective has been to evaluate if maternal age has an impact on clinical result of mosaic blastocysts. To reach our purpose, we analyzed IVF cycles with mosaic embryos and established two different groups depending on whether mosaic blastocysts were generated from oocytes retrieved at young maternal ages (≤35 years) or at older ages (>35years).
The results show that the rate of positive β-hCG, the implantation rate and the ongoing pregnancy rate are similar in both groups. We concluded that, in the absence of euploid embryos, mosaic embryos might be considered for transfer and similar outcomes are expected regardless of maternal age.

8

POSTER

Low serum progesterone on the day of frozen embryo transfer after artificial endometrial preparation: exploring the clinical impact of "rescue" strategies.

A. Herencia, J. Llácer, J. Ortiz, J. Castillo, C. Gavilán, B. Moliner, A. Bernabeu, R. Bernabeu.

Vaginally administered progesterone fails to achieve optimal serum levels in up to 30% of patients receiving frozen embryo under artificial cycles. An alternative strategy is to administrate additional progesterone subcutaneously.

Our data show that after receiving additional supplementation with subcutaneous progesterone, women with low serum progesterone on cryotransfer day, have similar ongoing pregnancy rates as women with normal levels. We collected data from 356 frozen embryo transfers, 55 of which had low progesterone levels. We did not find any differences between the groups, in terms of ongoing pregnancy rates, miscarriage and biochemical miscarriage.

In artificial cycles, when supplemented with additional subcutaneous progesterone, women showing low serum progesterone on cryotransfer day may expect similar clinical outcomes as women with normal levels. Pending on confirmatory studies, this strategy could be considered as an alternative to cycle cancellation.

9

POSTER

Identification of novel variants and candidate genes in women with familial idiopathic premature ovarian failure using whole-exome sequencing.

R. Morales, B. Lledó, J.A. Ortiz, F. Lozano, A. Bernabeu , A. Fuentes, J. Llácer, R. Bernabeu.

Premature ovarian failure (POF) is the loss of ovarian function before the age of 40, and it is a common cause of infertility in women. This pathology has a heterogeneous etiology. Some chromosomal and genetic alterations have been described, and could explain approximately 20% of cases. However, in most patients the origin remains unknown. Recent studies with next-generation sequencing (NGS) have identified new variants in candidate genes. These genes are not only involved in processes such as folliculogenesis, but also with DNA damage repair, homologous recombination, and meiosis.

In this study whole-exome sequencing (WES) was performed in fourteen women, from 7 families, affected by idiopathic POF to identify probably pathogenic mutations in genes related with POF. 43 probably damaging genetic variants were identified in 39 genes expressed in the ovary and related with POF or linked to ovarian physiology. We have described genes that have never been associated to POF pathology, however they may be involved in key biological processes for ovarian function.

WES has shown to be an efficient tool to identify genes as cause of POF, and has demonstrated the polygenic etiology. This study proposes new candidate genes and variants, having potentially moderate/strong functional effects, associated with POF.

INSTITUTO BERNABEU

10

POSTER

Poor ovarian response is associated with IL-6/IL-10 ratio in women undergoing in-vitro fertilization

A. Fabregat, M. Hortal, B. Lledó, J.A. Ortiz, B. Moliner, A. Bernabeu, J. Llácer, R. Bernabeu.

Although it seems to be some evidence about the possible effect of the immune system on ovarian function and implantation, the role it plays in ART remains unknown. Our aim was to investigate the association between serum cytokine levels and ovarian reserve and response. For this, 149 patients were included in a retrospective study between February 2016 and December 2020. Serum cytokines IL-2, IL-4, IL- 6, IL-8, IL-10, VEGF, IFNγ, TNFα, IL-1α, IL-1β, MCP-1 and EGF were measured previously to the ovarian stimulation cycle.

We found that the ratio IL-6/IL-10 is higher in patients with low ovarian response. Also, patients with a ratio value above 0.9 are 3 times more at risk of having a low response to ovarian stimulation. In addition, performing hierarchical cluster analysis, we observed that the antral follicle count, the total oocytes recovered and the MII recovered are grouped with the cytokines IL-2, IL-4, IL-6, IL-10, IL-1α, IL-1B, IFNγ and TNFα.

The ratio IL-6/IL-10 could be used as a biomarker to predict the ovarian response and provide real expectations regarding the success of IVF cycle. The action of IL-6 could be reduced by blocking its receptor using humanized monoclonal antibodies as Tocilizumab.

11

POSTER

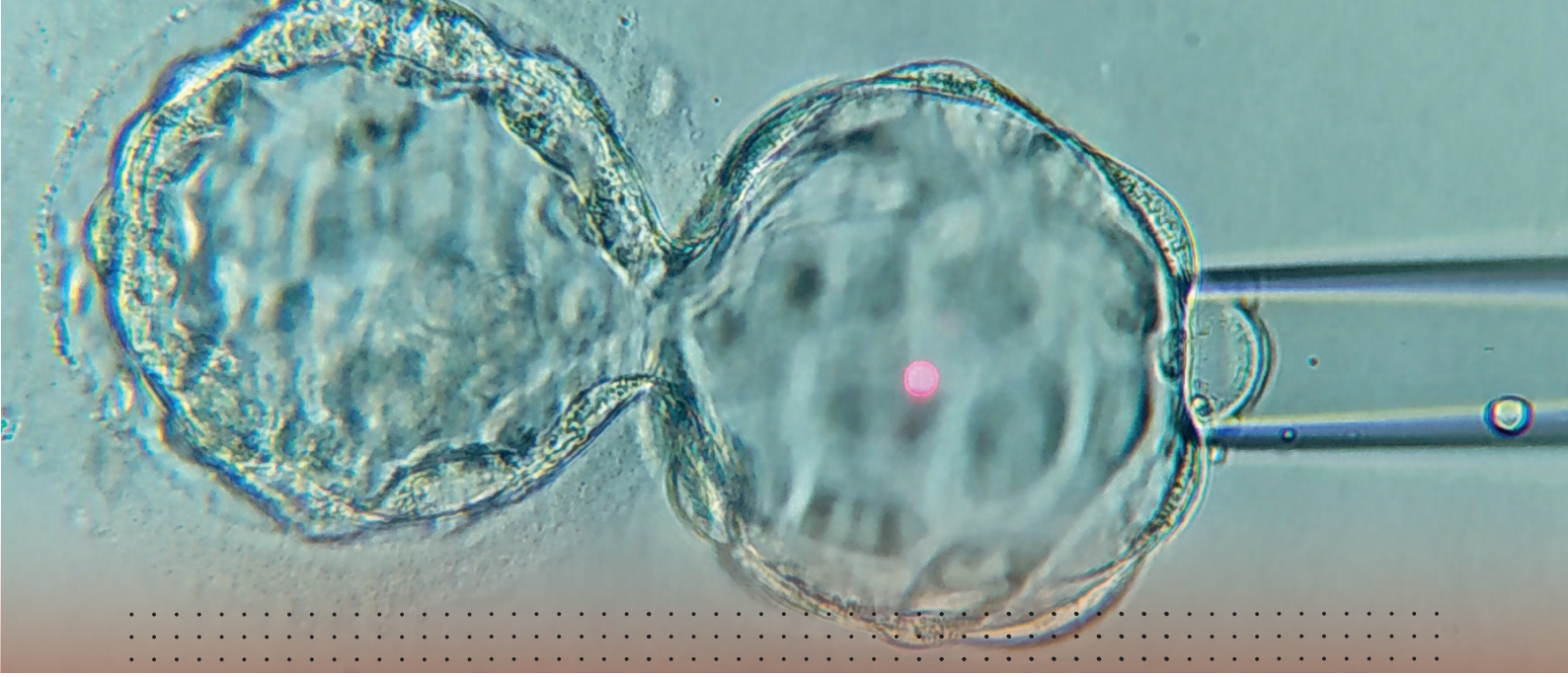
Clinical relevance of re-expansion after blastocyst thawing

M. Aparicio, L. Herrero, L. Cascales, J. Llácer, J. Ten, R. Bernabeu.

Improvements in embryo culture conditions, endometrial receptivity protocols and vitrification as a revolutionary cryopreservation technique have allowed the expansion of blastocyst stage transfers (Lieberman and Tucker, 2006; Stanger et al., 2012; Rienzi et al., 2017), increasing clinical pregnancy and implantation rates in IVF cycles.

The re-expansion of thawed blastocyst at the time of transfer has been considered as a good prognosis factor, but not always thawed embryos re-expand. To evaluate the relevance of this event, we compared the clinical results of the re-expanded embryos versus the collapsed ones after their thawing and transfer. Positive beta human chorionic gonadotrophin, pregnancy rate, early miscarriage rate and live birth rate were compared between these two groups.

All the variables analysed were statistically significant in favour of the re-expanded embryo group except for early miscarriage rate. Therefore, we can conclude that the transfer of re-expand blastocyst could be a positive indicator of clinical outcomes. In case of non-re-expand embryos, transfer of two could be reasonable.



12

POSTER

Laser-assisted collapse of blastocysts prior to vitrification improves clinical outcomes.

J. Ten, J. Guerrero, A. Rodríguez-Arnedo, L. Martí, M. Herreros, N. Díaz, R. Sellers, M.C. Tió, A. Bernabeu, J. Llácer, R. Bernabeu.

Freeze all, cycle segmentation and, in general, single embryo transfer (SET) strategies (for example trophectoderm biopsy-based aneuploidy testing) have pointed blastocysts vitrification as the best option for reproductive practice worldwide. Artificial shrinkage seems to be a pre-vitrification parameter associated with an increased embryo survival after warming and implantation rate. However, the available medical evidence shows controversial results with only a limited number of prospective studies assessing the subject.

The objective of this study was to evaluate the effect of artificial laser-assisted collapse before vitrification on pregnancy and implantation rates after transfer of vitrified-warmed blastocysts in a prospective cohort study where 394 women were included. Our results indicated that the artificial shrinkage by laser-induced collapse before vitrification significantly increased the implantation and clinical pregnancy rates after single thawed embryo transfer.

Considering the large number of blastocyst vitrification cycles that are carried out worldwide, artificial laser-assisted collapse before vitrification has the potential to increase the clinical results in benefit of many patients.

13

POSTER

Progesterone levels using pessaries of 400 mg of vaginal progesterone (Cyclogest®) in artificial cycles for frozen embryo transfer

J. Llacer, A. Pitas, J.A. Ortiz, C. Gavilán, A. Herencia, S. Albero, J.C. Castillo, A. Bernabeu, R. Bernabeu.

The effectiveness increase in embryo vitrification in our laboratories has made treatments with frozen embryos the most common in assisted reproduction treatments.

In such treatments, the correct preparation of the maternal uterus is essential to optimize results and research to find the best preparation method should be a priority for the scientific community.

Perhaps the most important medication for these treatments is progesterone. In fact, achieving adequate blood levels using this drug has been shown to be essential to optimize the chances of success.

This work compares two forms of administrating progesterone vaginally. The classic using micronized progesterone tablets and the recent possibility of using vaginal ovules of this drug.

The results have been very positive with the new preparation with a highly significant decrease in the number of patients who arrive at the transfer with inadequate progesterone levels.

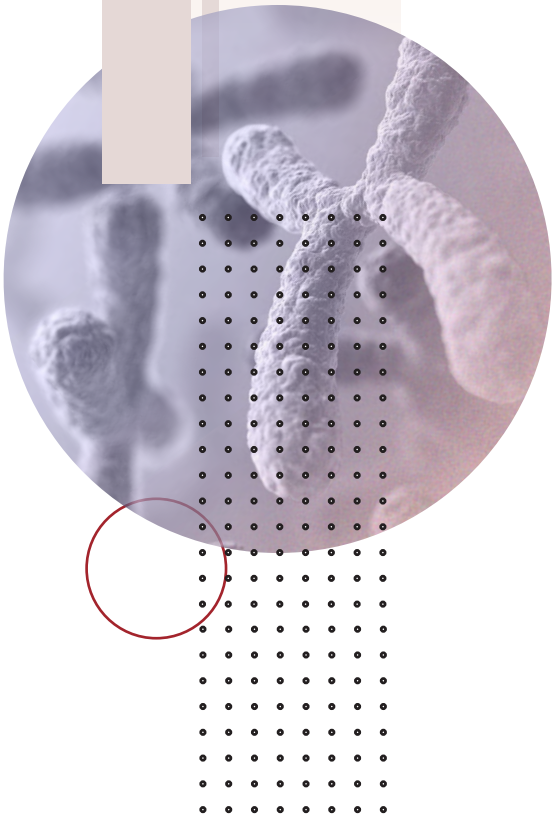
This finding will be of great help to optimize the chances of success and improve the quality of life of our patients, reducing the risk of having to administer additional injections after embryo transfer and throughout the first trimester of pregnancy.

14

POSTER

A feasible diagnostic approach for the cryptic subtelomeric traslocations in early recurrent miscarriage patients by preimplantation genetic testing (PGT).

B. Lledó, R. Morales, J.A. Ortiz,, A. Cascales, A. Fabregat, J. Ten, B. Moliner, A. Fuentes, A. Bernabeu, J. Llácer, R. Bernabeu.



Chromosome translocations are frequently associated with birth defects, spontaneous early pregnancy losses and infertility. However, submicroscopic traslocations (so-called cryptic traslocations) are too small to be detected by conventional karyotyping. Thus, cryptic traslocations detection is challenging. The aim of this study is to investigate the feasibility of using PGT as an indicator of parental balanced cryptic traslocations. We included three couples who underwent PGT for unexplained repeated pregnancy loss (RPL). Twenty-three embryos from those couples were biopsied at blastocyst and analysed for CNVs (copy number variations) detection using low coverage whole genome NGS. Overall, CNVs of terminal duplication and deletion that imply unbalanced traslocation derivatives were detected in the 43.5% of biopsied embryos. The size of CNVs detected ranges from 8Mb to 20Mb. Thanks to PGT and FISH we could conclude the abnormal karyotype from the carrier parent: 46,XY,t(5;21)(q33.2;q21.2) for couple 1, 46,XY,t(6;16)(p22.3;q22.1) for couple 2 and 46,XY,t(2;6)(p25.1;p24.2) for couple 3. Finally, each couple performed a cryotransfer of a single normal balanced embryo. Two pregnancies are ongoing. This study shows the value of PGT for unexplained RPL, followed by parental FISH to better characterize CNVs and identify couples in whom one partner carries a cryptic translocation. Accurate diagnosis of parental chromosome translocation can achieve with FISH only, but FISH would not be performed unless PGT showed CNVs.

15

POSTER

Follicle-stimulating hormone receptor genotype and its influence on the results of double ovarian stimulation in IVF cycles

M. Hortal, B. Lledó, J.A. Ortiz, A. Fuentes, A. Cascales, F.M. Lozano, A. Bernabeu, J. Llácer, R. Bernabeu.

Despite the advances made in recent years, many women have turned to egg donation in order to become mothers due to their low ovarian reserve. For these cases, the ovarian stimulation optimization can make the difference between achieving pregnancy with your own eggs or not.

Different approaches have been made, such as double ovarian stimulation and the application of pharmacogenetics, especially with regard to position 680 of the FSH receptor. The work's aim is to combine both strategies and to study whether the type of follicle-stimulating hormone administered influences the luteal phase in the same way as in previous studies in the follicular phase.

In this study carried out in 134 patients from Instituto Bernabeu, it was concluded that the performance of ovarian stimulation in the luteal phase is greater than in the follicular phase, both in the group of patients and in all genotypes separately. Furthermore, the results are better when patients are stimulated with the type of FSH that already had a higher yield in follicular phase for their genotype. It has also been observed that stimulation in the luteal phase lasts longer and more gonadotropins are consumed than in the follicular phase, especially in patients with the SS genotype.

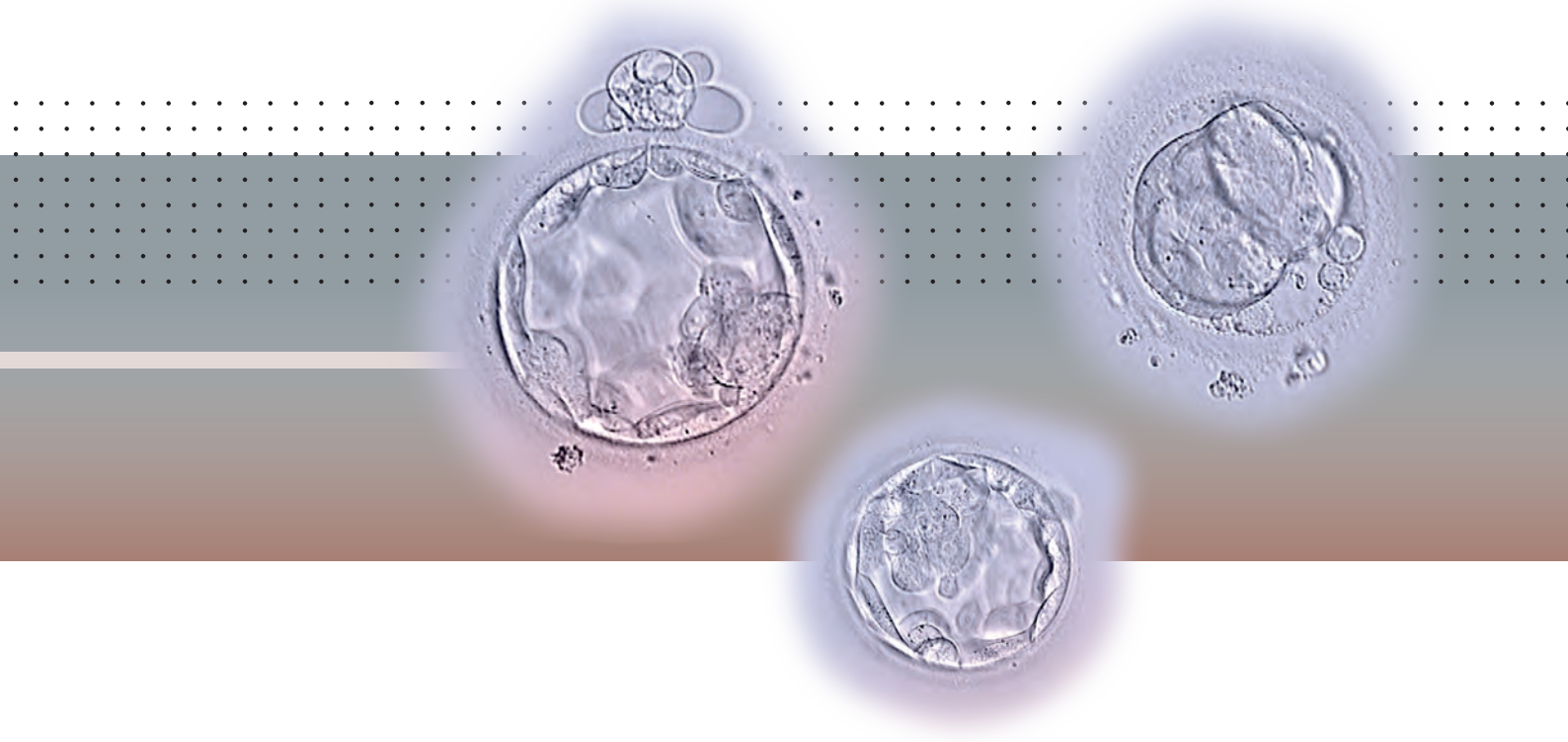
16

POSTER

Birthweight is not affected by freezing process. Results from a quasi-experimental study using the Oocyte Donation Model

N. Díaz, J. Llácer, E. Álvarez, E. Serrano, J. A. Ortiz, A. Bernabeu, J. Ten, R. Bernabeu.

Freezing-thawing constitutes one of the processes with a potential impact in the newborn's health. Data coming from register-based studies and metaanalisis have found an increase in birthweight with a higher incidence for gestational age in newborns coming from frozen embryo transfer. This is a matter of concern since epigenetic alterations have been suggested to explain this finding casting doubts on future health during childhood and adulthood. Clarifying the safety of cryotechniques should be a priority considering that, at present, frozen embryo transfers outnumber fresh embryo transfers in IVF clinics. This study evaluated 670 women oocyte recipients who made fresh or frozen embryo transfers at Instituto Bernabeu. The results show no differences in the birthweight, macrosomy, large for gestational age and pre-term birth between fresh or frozen embryo transfers. In conclusion, our study in the oocyte donation model, eliminating potential confounders which might influence foetal growth, demonstrates that embryo freezing / thawing procedures have no impact on birthweight.



INSTITUTO BERNABEU

INSTITUTO BERNABEU
MEDICINA REPRODUCTIVA

+34 965 50 40 00
www.institutobernabeu.com

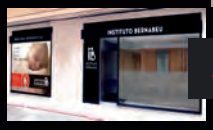
SPAIN

Alicante

Madrid

Mallorca

Cartagena



Albacete

Elche

Benidorm

ITALY

Venice