

Centro S.T.S. s.r.l.

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ONE DAY SURGERY

Diagnosis in Reproductive Medicine and ART

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K-Systems G185



K-Systems G185



G185

A new generation long term desk top CO₂ incubator with low O₂ control capable of maintaining an optimal environment for the development of embryos up to blastocysts.

G185

The unit has been running for 6 months in our Center

Our experience

Our results

TRIAL

We compared results after ICSI in terms of fertilization rate at 18 hours, number of blastomeres at 48-52 hours, quality score on transfer day 3 or on day 5 in weekend. Implantation rate at 6 week and ongoing pregnancy rate with BCF at 8 week in patients whose ICSI injected oocytes had cultured in same media under oil in low O₂ until transfer, N° 50 and 50 in two different incubators.

Materials and methods

- Group A) 50 Cultures in classic incubator (150 liters, single chamber with 8 mini doors) in CO₂ 6%, O₂ 5%, N₂ 89%, Humidity 95%
- Group B) 50 Cultures in the new G185 incubator (with 10 separated mini chambers) in CO₂ 6%, O₂ 5%, N₂ 89%, Humidity 0%.

CRITERIA

We selected 100 ICSI –patients whose three selected and successfully injected oocytes (following italian law n° 40) had cultured in random way:

N° 50 (Group A) in classic humidified CO₂ incubator of 150 liters with 8 little doors with low O₂ control

N° 50 (Group B) in dry CO₂ G185 incubator with low O₂ control

CRITERIA

- Same culture Media.
- Same stimulation protocol
- The patients had to be at their first attempt of ART,
- Their age had to be between 30 - 38 years.
- They had to have more than five good follicle (mean diameter >18 mm) on day of rLH administration.
- No poor responders or patients with OHS had admitted.
- Parameters of sperm were:
 - % of normal morphology after Percoll between 4 and 8
 - % of good motility between 10 and of 15.
- ICSI had to be performed by the same biologist.

RESULTS

- Mean age of patients was 33,5 years in group A and 34,2 years in group B.
- Mean number of oocytes retrieved where 7,2 in group A and 6,8 in group B.
- Mean number of oocytes MII was 92 % in group A and 90 % in group B.
- Two patients in group A and three in group B failed fertilization.
- % of fertilization at 18 hours was:
 - 82 in group A (123 zygotes from 150 oocytes inseminated)
 - 84 in group B (127 zygotes from 150 oocytes inseminated).

K 185

- At 48-52 hours, the mean of blastomeres was: 4,1 in Group A and 4,3 in group B.
- At 72-76 hours, just before transfer, another biologist assessed embryos for quality score.
- 47 embryos of grade A (less than 10 % of fragments) in group A versus 56 in group B.
- 31 embryos of grade B (more than 10 % and less than 25 % of fragments) in group A versus 30 in group B.
- 30 embryos of grade C (more than 25 % and less than 50 % of fragments) in group A versus 26 in group B.
- 20 embryos of grade D (more than 50 % of fragments) in group A versus 14 in group B.

RESULTS

- We performed 48 transfers in group A and 47 in group B.
- We transferred only embryos of grade A, B and C, n° 108 in group A (mean 2,1 for patient) and 112 in group B (mean 2,3 for patient)
- On 14th day after transfer we have had 20 positive test in group A (42%) and 22 in group B (46%).
- Implantation rate calculated 4 weeks after transfer was 23 % in group A and 26 % in group B.
- We have had 18 ongoing pregnancies assessed with ultrasound at 6 weeks after transfer in group A and 21 in group B.

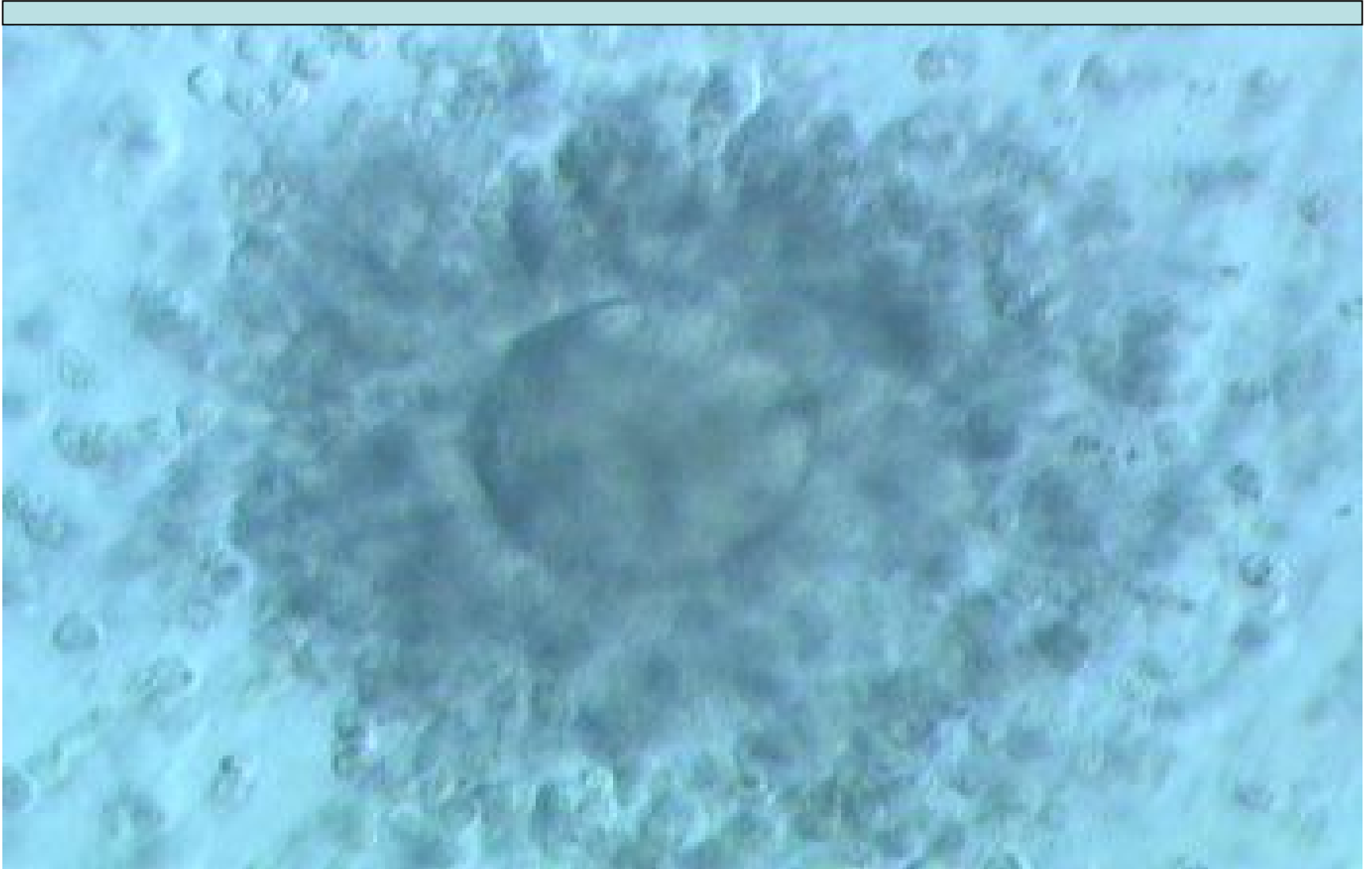
COMMENT

The comparison of our results in this small trial allows us only to conclude that culturing embryos in mini chambers of the new G185 incubator, we can have good results in terms of embryos' quality score, implantation rate and pregnancy rate as we can have culturing them in big conventional incubator with humidified trigas.

COMMENT

- Since the G185 takes up less space, consumes less gas, allows the contemporary safe culture of many patients (up to ten) each one in single mini chamber, as gas are sterilized with UV and filtered with HEPA/VOC, as it is possible to sterilize with high temperature all the mini chambers, today we prefer to perform embryo's cultures in the K-Systems, G185.

Collected oocyte



ICSI



Zygote



Embryo 48 hours post insemination



Expanded Blastocyst



Hatching Blastocyst



Hatched Blastocyst



Acknowledgement

Team of CENTRO S.T.S. S.r.l.

1. Tiziana Baldassarra, Biologist
2. Luca Mezzone, Biologist
3. Maria di Bona, Nurse
4. Paola Marcelli, Midwife
5. Giuseppe Leuci, Anaesthetist
6. Luigi Lombardi, Anaesthetist
7. Di Palma Paolo, Andrologist
8. Rosa Ornella, Psychologist
9. Alonzi Rita, Secretary