



# Embryo Quality and Clinical Outcomes using *EmbryoScope™*, *Minc™* and *Heracell™ 150i* incubators: preliminary results from a randomized study with donor oocytes

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## INTRODUCTION

The development of designed benchtop incubators with controlled temperature and gas, has been performed in the last few years to provide more stable conditions for the culture of human embryos. In addition, the incorporation of time-lapse monitoring systems to these new incubators provides supplementary information about morphokinetics of embryo development. The advantages of using this new generation of incubators have led to improved embryo quality rates and better clinical outcomes.

The aim of our study was to compare the performance of different types of incubators under our laboratory conditions.

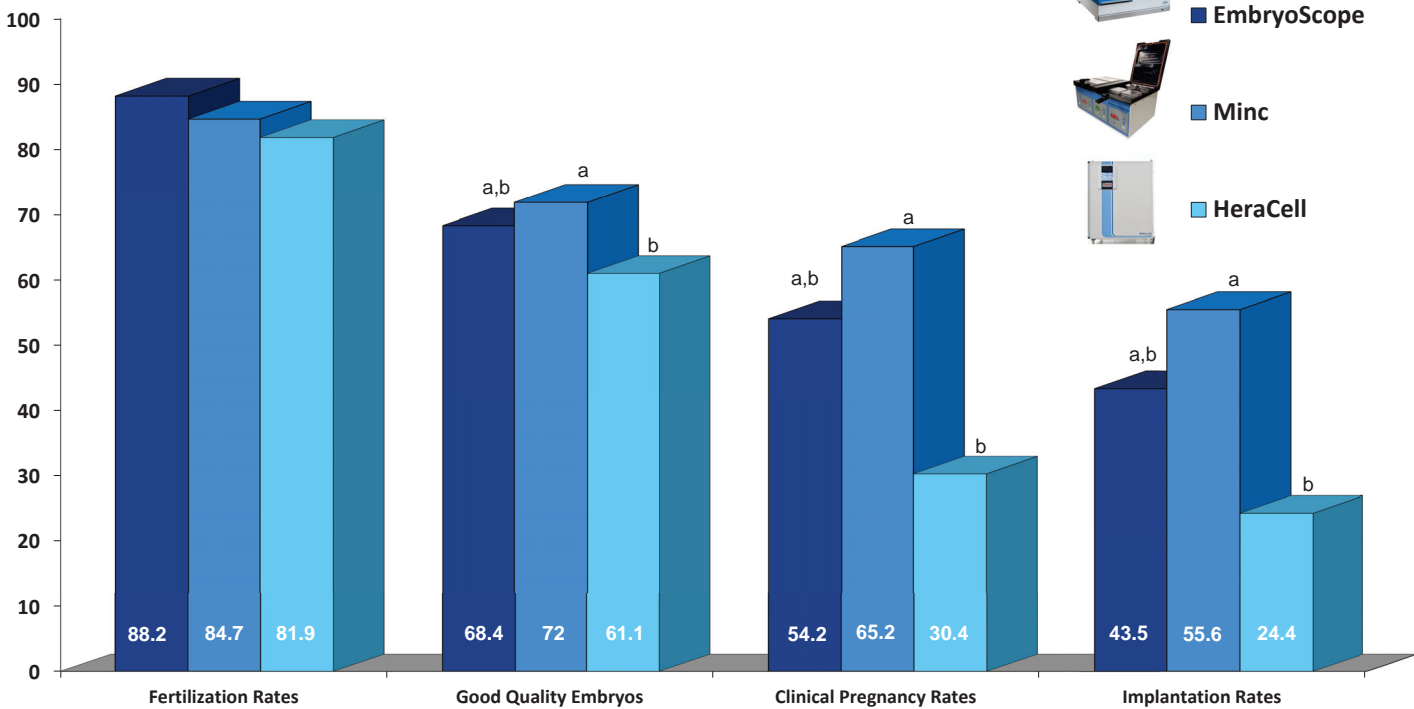
## STUDY DESIGN, MATERIAL AND METHODS

This prospective randomized study, included 72 recipient cycles performed between October and December 2013. Fertilization, good quality embryos, embryo replacement, clinical pregnancy and implantation rates were compared among the different incubators.

Embryo culture was performed using *Embryoscope™* (24 cycles; 231 embryos), *Minc™* (24 cycles; 235 embryos) or *Heracell™ 150i* (24 cycles, 256 embryos) incubators.

Injected oocytes were cultured in Global Total® medium (LifeGlobal) in low oxygen tension. Embryo replacement was performed on Day 3. Results were compared by  $\chi^2$  or student's *t*-test.

## RESULTS



<sup>a-b</sup> Values with different superscripts within the same column and category differ significantly between treatments (p < 0.05).

## CONCLUSIONS

Our preliminary data suggest that **the usage of benchtop incubators in human IVF improves embryo quality and clinical outcomes**. These results could be attributed to more stable culture conditions in terms of both temperature and pH offered by the new benchtop incubators compared to standard *Heracell™ 150i*. Further studies should be carried out to confirm the beneficial effects of using benchtop incubators in IVF laboratories.