

THE NEGATIVE INFLUENCE OF SPERM CRYOPRESERVATION ON THE QUALITY AND DEVELOPMENT OF THE EMBRYO DEPENDS ON THE MORPHOLOGY OF THE OOCYTE

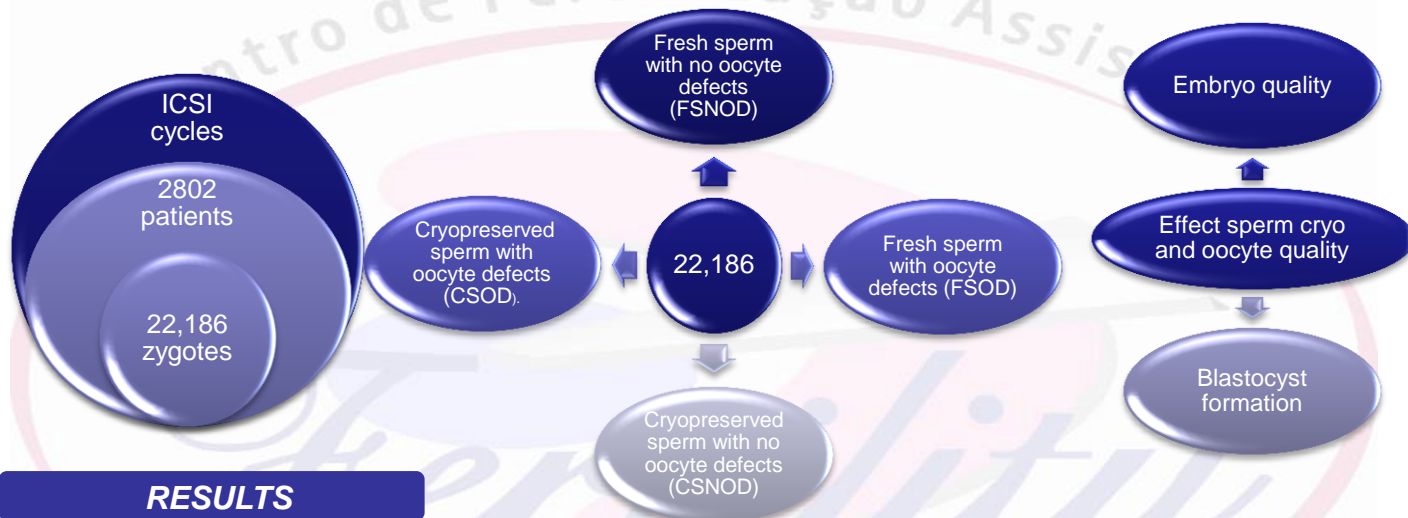
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INTRODUCTION

Sperm cryopreservation represents a valuable therapeutic option in the management of infertility. However, it is known to result in diminished sperm quality. Although the ICSI may circumvent some of the problems with sperm quality, whether ICSI can overcome the effect of the cryo-damage of sperm and, therefore, avoid detrimental effects on the quality and development of the embryo, has yet to be elucidated. Therefore, the goal of the present study was to identify the effect of sperm cryopreservation on embryo quality and the chance of blastocyst formation when oocytes free of dimorphisms are injected and when at least one oocyte dimorphism is present.

MATERIALS AND METHODS



RESULTS

The percentage of high-quality embryos on days two and three and percentage of embryos that reached the blastocyst stage, when ICSI was performed using: (i) fresh sperm and oocytes free of defects; (ii) fresh sperm and oocytes with defects; (iii) cryopreserved sperm and oocytes free of defects and; (iv) cryopreserved sperm and oocytes with defects.

Variable	FSNOD (n=5715)	FSOD (n=13,730)	CSNOD (n=850)	CSOD (n=1,891)	P value
Day two high-quality embryos	56.55% ^a (3232/5715)	54.00% ^b (7414/13730)	52.71% ^b (448/850)	48.23% ^c (912/1891)	<0.001
Day three high-quality embryos	51.19% ^a (2926/5715)	49.50% ^b (6797/13730)	48.94% ^b (416/850)	44.84% ^c (848/1891)	<0.001
Blastocyst formation	50.70% ^a (1014/2000)	50.29% ^a (2508/4987)	47.50% ^a (133/280)	45.38% ^c (295/650)	0.019

Different subscripts in the same line are significantly different. FSNOD: Fresh sperm with no oocyte defects, FSOD: Fresh sperm with oocyte defects, CSNOD: Cryopreserved sperm with no oocyte defects, CSOD: Cryopreserved sperm with oocyte defects.

CONCLUSION

Our results suggest an oocyte quality-dependent negative effect of sperm cryopreservation on embryo quality and the chance of blastocyst formation. Apparently, when at least one morphological defect is present, the oocyte is not able to repair a possible negative effect of sperm cryopreservation.