



The mitochondrial DNA content of cumulus cells may help predict embryo implantation

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Mots-clés	Cumulus cells [12], Embryo implantation [13], Granulosa cells [14], mitochondria [15], mitochondrial DNA [16]
Résumé en anglais	<p>PURPOSE: The quantification of mtDNA in cumulus granulosa cells (CGCs) surrounding an oocyte has been positively linked with morphological embryonic quality. In the present study, we evaluated the link between the amount of mtDNA in CGCs surrounding an oocyte and the chances for the corresponding embryo of implanting and leading to an ongoing pregnancy.</p> <p>METHODS: This is an observational study, performed on 84 oocyte-cumulus-complexes (OCCs) having led to the replacement of an embryo in the maternal uterus, retrieved from 71 patients undergoing IVF with intracytoplasmic sperm. The OCCs were classified in two groups, one including 26 OCCs having led to an implanted embryo and the other including 58 OCCs having led to a non-implanted embryo. The average mtDNA content of CGCs was assessed by using a quantitative real-time PCR technique.</p> <p>RESULTS: Significantly higher mtDNA copy numbers in CGCs were associated with implanted embryos than with non-implanted embryos (mean 215 [sd 375] and 59 [sd 72], respectively; $p < 10$). Multivariate analysis, taking into account the women's age, the embryo quality, and the AMH level, suggests an independent relationship between the mtDNA content of CGCs and the potential of embryo implantation.</p> <p>CONCLUSION: During in vitro fertilization (IVF) procedures, the probability of the implantation of the embryo appears to be closely correlated to the mtDNA copy numbers in the CGCs. Our results highlight the interest of mtDNA quantification in CGCs as a biomarker of the potential of embryo implantation.</p>
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- [3] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=1372>
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