Despite tailored stimulation, individual patient response varies significantly, making this evidence-based and established technology a bit unpredictable. Namely, diminished oocyte quantity doesn't clearly correspond to oocyte competence and ART outcome, raising a question: can we bind multiple factors which are at work here? Retrospective statistical overview covered 3 years. We identified 3 groups: LRG (≤3 oocytes), NCG (natural cycles) and COG (≥4 oocytes, control group), compared the outcome, age, proportions of oocytes retrieved/mixed and embryos developed. LRG oocyte quality was rated. In addition, cohort of oocytes remained after transfer was analyzed by confocal microscopy to reveal sER network and mitochondrial distribution, and their ultrastructure examined by electron microscopy. Statistics partially discredit LRG: clinical-PR was 15%, 30% and 39% for LRG, NCG and COG, respectively; average LRG lady was 3 years and NCG 6 years older than COG. Nearly half of LRG oocytes were morphologically impaired but, unexpectedly, higher proportion of oocytes was mixed and more embryos developed per oocyte retrieved in LRG vs. COG. Somehow, statistics fail to explain specificity of poor prognosis groups: LRG and NCG. Our preliminary observations suggest the importance of sER clusters/mitochondrial distributional relation and possible correlation with number and position of vacuoles originating from sER and their contacts with mitochondria in developed embryos. Clearly, sERs/mitochondrial coupling in human oocytes requires further study because of important role sER has in oocyte maturation and probably in pregnancy outcome too. Complex, life-long oocyte history raises the need for wider platform for understanding normogenesis and accessing poor prognosis patients.