

LIVE BIRTH RATES FOLLOWING A SINGLE CYCLE OF THE AUGMENTSM TREATMENT

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Introduction

- Reduced mitochondrial DNA copy number in mouse and porcine oocytes is associated with embryonic development failure [1,2].
- The rate of blastocyst development in mitochondrial-deficient, porcine oocytes is improved with mitochondrial supplementation [2,3].
- The first human experience with Autologous Germline Mitochondrial Energy Transfer (The AUGMENT treatment) was among poor prognosis patients and was associated with higher pregnancy rates compared with those patients' historical performance [4].
- The goal of this retrospective cohort study was to determine the live birth rate (LBR) within AUGMENT initiated cycles.

Materials and Methods

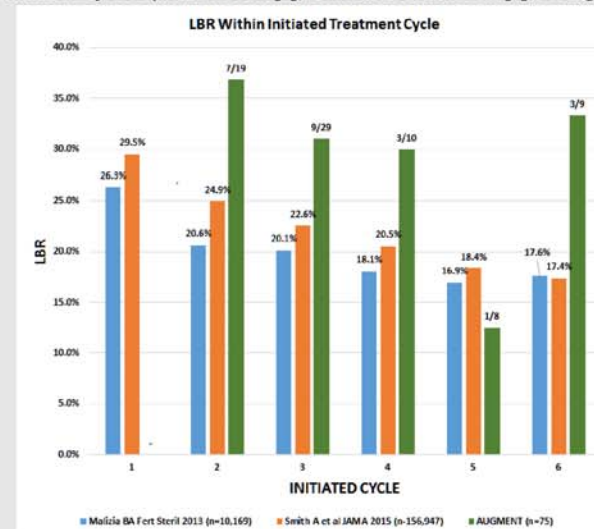
- Following ethics committee approval, the LBRs within initiated cycles were evaluated among patients who underwent a single AUGMENT treatment (AUG) in two centers (TCART; Toronto, Canada and Fakh-IVF; UAE).
- The analysis included poor prognosis patients with no prior live births who experienced 1-5 prior failed IVF cycles and who underwent AUG that either (a) failed to produce a viable embryo or (b) resulted in fresh or frozen embryo transfer by mid- August 2015.
- The LBR within an initiated AUG cycle was calculated as the ratio of the number of pregnancies resulting in a live birth ≥ 24 weeks gestation to the number of evaluable AUG cycles initiated for that given cycle.
- Physician reported maternal and neonatal outcomes were also assessed
 - Preterm labor was defined as delivery < 37 weeks gestation (ACOG).

References

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Results

- Safety Outcomes:
 - Overall term delivery rate:16/23 (70%)
 - 19 singleton gestations (33-41.3 weeks); term delivery rate: 84.2%
 - 1 bleeding previa at 33 weeks
 - 1 term newborn diagnosed with amniotic band syndrome
 - 4 twin gestations.(26.6-35.0 weeks); all preterm deliveries
 - No maternal morbidity, maternal mortality, stillbirths, or neonatal deaths.
- Live Birthrate:
 - The overall LBR with AUG was 23/75 (30.7%). The LBRs within AUG initiated cycles are shown below in green, alongside published LBRs within initiated cycles (Malizia et al [5]; blue and Smith et al [6]; orange)



Conclusions

- Among poor prognosis patients with no prior live births and 1-5 prior failed IVF cycles, the observed LBR within an AUG initiated cycle was generally $\geq 30\%$
- The observed safety profile was consistent with that seen with IVF
- While the data is limited and no direct comparisons with published data can be made, the AUGMENT treatment shows promise as an adjunct to IVF