NOVEL MEDIUM PRESERVES SPERM VITALITY AND CONFERS PROTECTION FROM OXIDATIVE STRESS INDUCED INJURY COMPARED WITH ESTABLISHED MEDIA FOR ALL SUBJECTS AND HAS COMPARABLE CRYOPROTECTION CAPACITY

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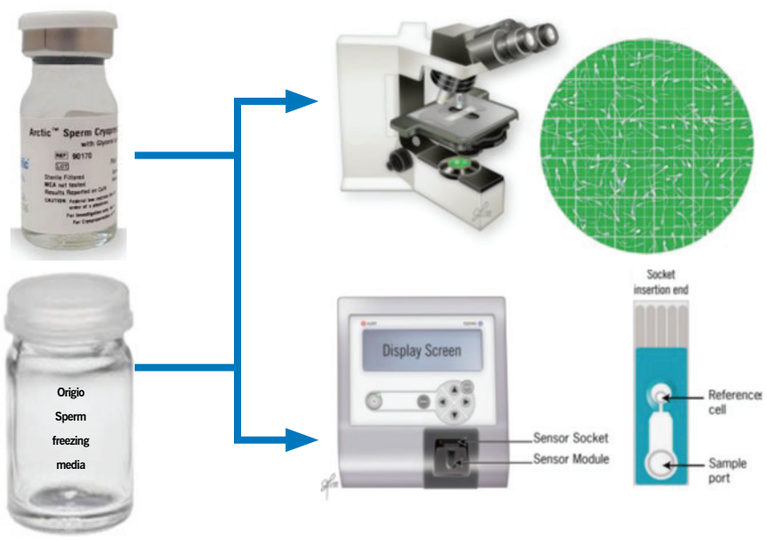
INTRODUCTION

- Cryopreservation allows men to preserve their fertility.
- Cryopreservation greatly reduces sperm parameters and increases DNA damage.
- Study objective was to examine if the new cryopreservation medium "Arctic sperm cryopreservation medium" (ASCM) improve sperm parameters and provide better cryoprotection from injury and oxidative stress (OS)-induced damage compared with Origio sperm freezing media (OSFM).

EXPERIMENTAL DESIGN

Prospective randomized controlled
- Normozoospermic donors (n=22)
- Infertile men (n=20)



Pre-freeze and Post-thaw Parameters Analyzed:
- Sperm concentration
- Sperm Motility
- Viability
- ORP
- SDF

RESULTS

- ASCM required less medium than OSFM [0.53 mL (CI 0.39-0.93) vs. 1.50 mL (CI 1.10-2.04 p<0.0001)].
- The change in normalized ORP from pre-freeze (PF) to post-thaw (PT) was found to be significantly increased in OSFM compared to ASCM (2.05, CI 1.15 to 3.23 mV/10^6/mL, vs.1.01, CI 0.54 to 1.75 mV/10^6/mL, p=0.011). (Fig. 1).
- The overall decrease in viability was significantly higher in OSFM compared to ASCM (39.0(CI: 38.0-47), 26.5(CI: 22-28), P=0.0048). (Fig. 2 and Table 1).

Figure 1: Post-thaw ORP values in ACSM compared to OSFM

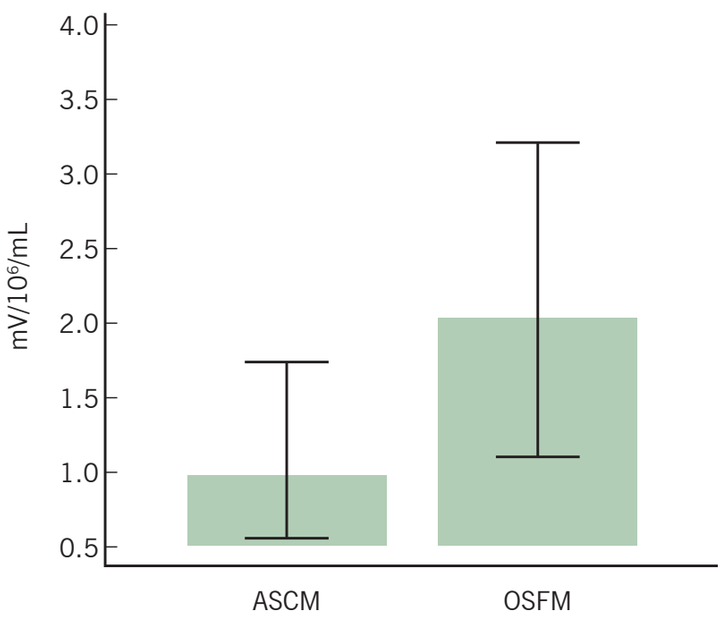


Figure 2: Decrease in the post-thaw viability in OSFM compared to ACSM

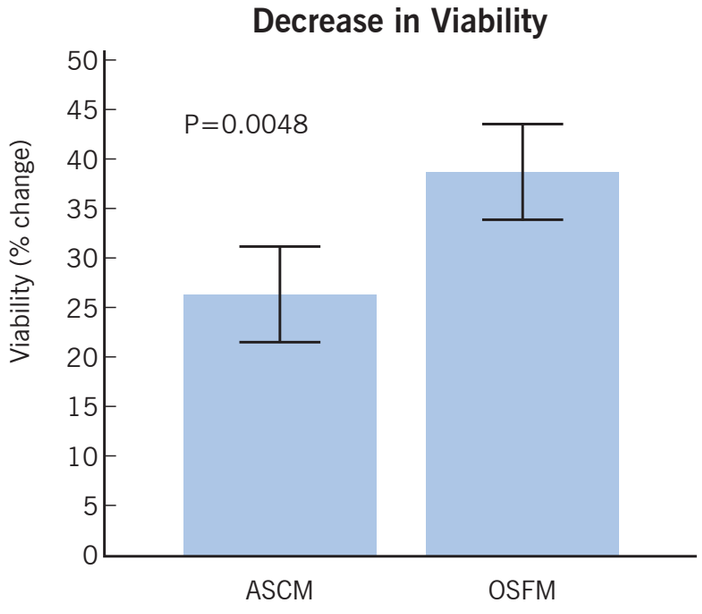


Table 1: Sperm Viability changes and comparison of impact of the two media

Parameter	Donors	Patients	Mann-Whitney test
Overall			
Viability change PF to PT	39.0 (32.6-46.6)	23.5 (20.3-32.3)	0.0060
ASFM group			
Viability change PF to PT	38.0 (30-48)	20.5 (18-40)	0.2364
OSFM group			
Viability change PF to PT	39.0 (38.0-47)	26.5 (22-28)	0.0048

p value significant when <0.05

CONCLUSION

- The novel medium is a xeno-free medium with dual buffering capacity, economical and can be used for better viability preservation and protection from OS especially in abnormal patient.
- Future controlled studies with larger sample size are needed to compare ASCM with the other established sperm freezing medium such as Test yolk buffer and Sperm freeze solution to validate the findings of this study.

SCAN ME

ACRM

19-AND-1599231