

Impact of warming solution composition on pregnancy maintenance after vitrification of equine ICSI-derived embryos

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INTRODUCTION

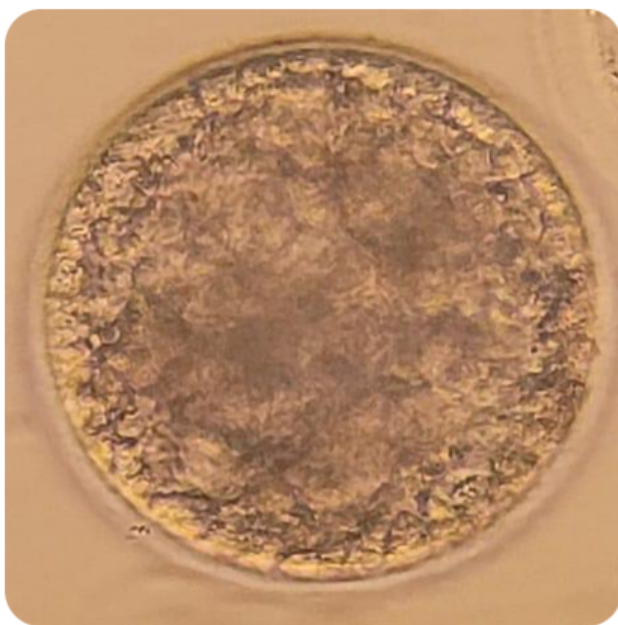
Cryopreservation of embryos enables genetic banking, transport and the application of assisted reproductive technologies. Vitrification is a rapid method that prevents ice crystal formation and reduces cryoinjury. Efficient removal of cryoprotectants during warming is considered important to preserve post-warming viability, and one-step warming with an embryo holding solution has been increasingly adopted for its operational simplicity.

OBJECTIVE

To compare two commercial warming solutions regarding embryo transfer success and pregnancy maintenance.

MATERIALS & METHODS

132 VITRIFIED BLASTOCYSTS • WARMING TO DAY 60



STEP 1
High-quality blastocysts



STEP 2
Vitrification (Botuvitri, Botupharma)



STEP 3
Warming (embryos split into two groups)



STEP 4
Embryo transfer

Conventional Holding
HS — CONTROL ARM

n = 63

Supplemented Holding
BOTUEMBRYO UP — ENRICHED ARM

n = 69

BOTUEMBRYO UP — ENRICHED ARM

Amino acids
Hyaluronic acid
Antioxidants



Day 0 • Transfer

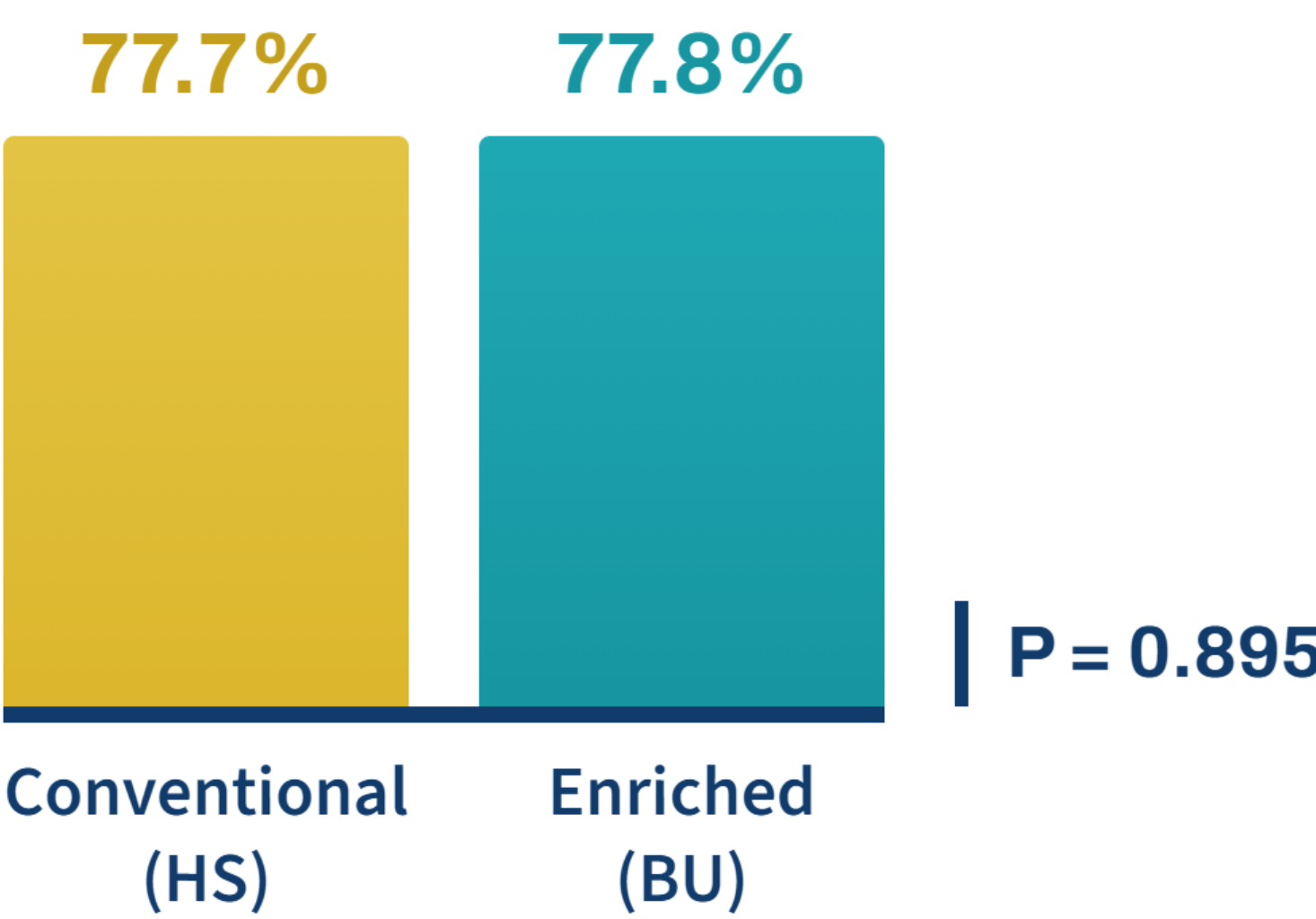
Day 15 • Gestational sac

Day 60 • Pregnancy

RESULTS

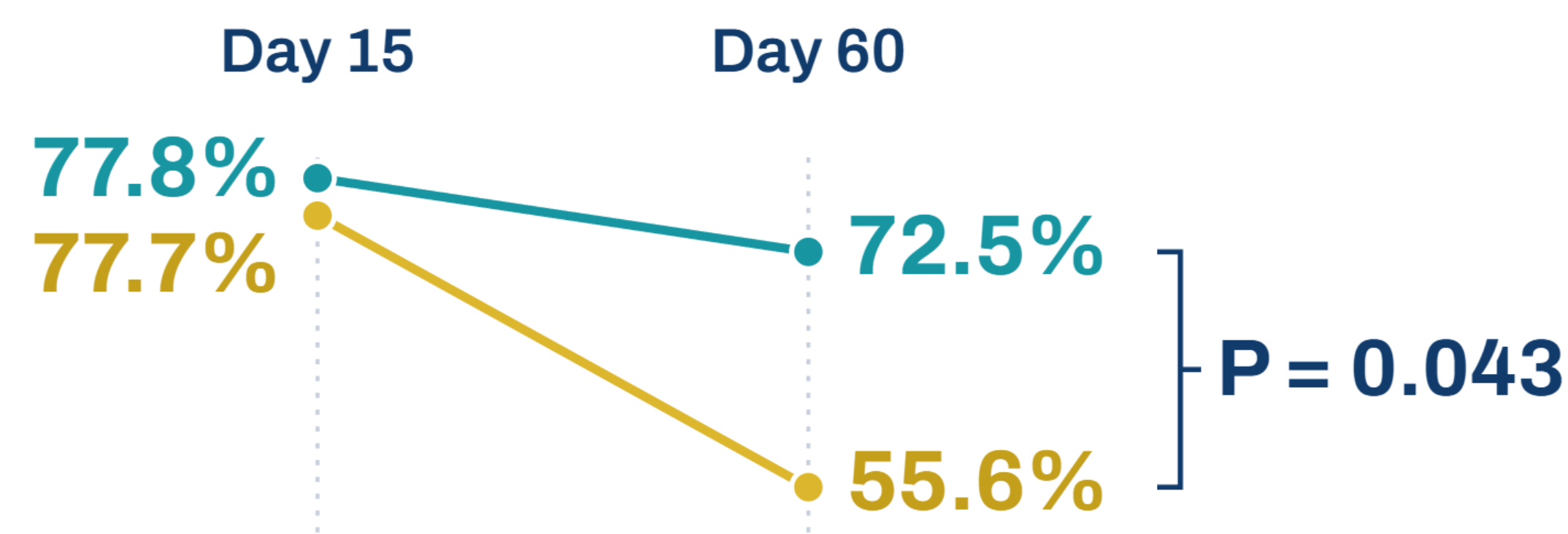
01 — DAY 15

Initial implantation rates are virtually identical



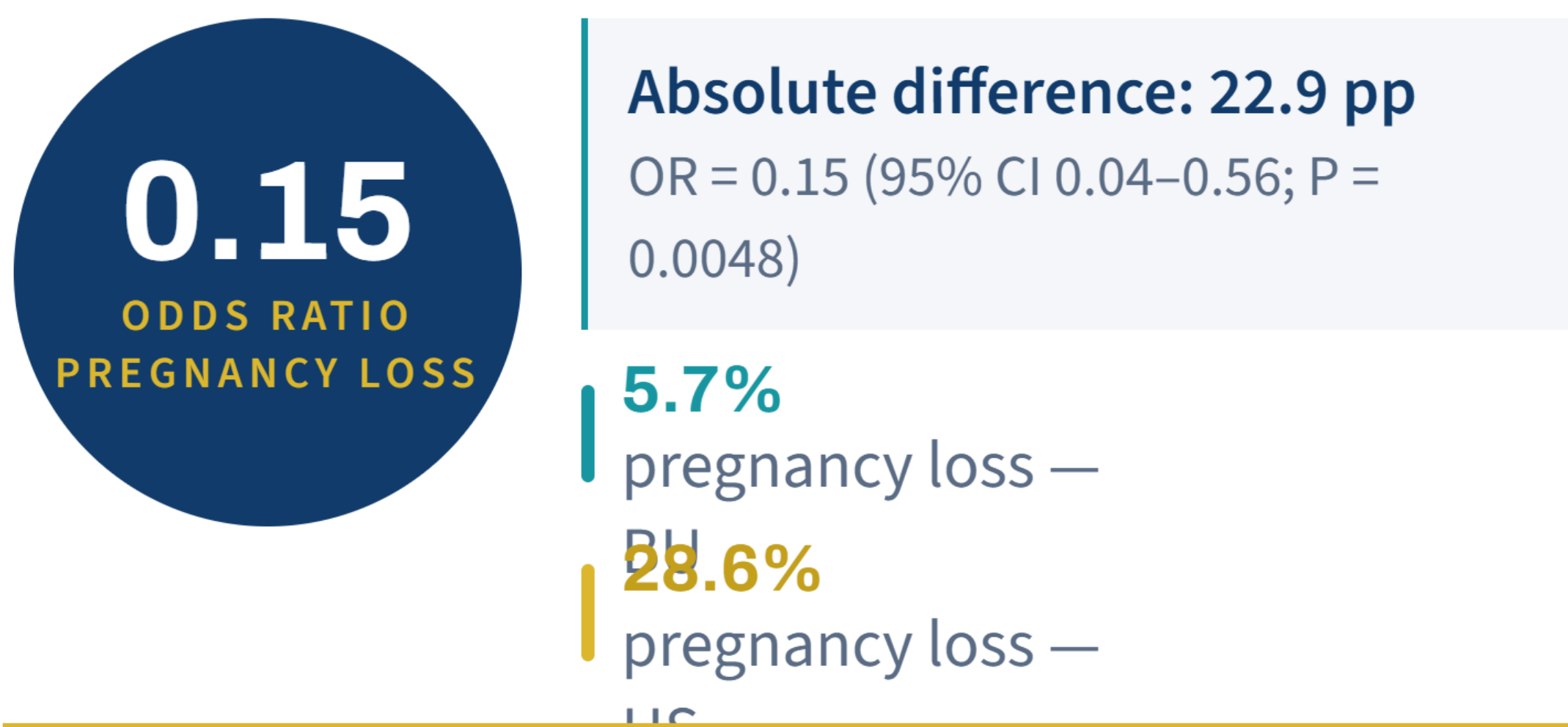
02 — DAY 15 → DAY 60

Enriched medium reveals a significant survival advantage



03 — EFFECT SIZE

Quantifying the reduction in early embryonic loss



The enriched solution reduces the likelihood of pregnancy loss by approximately 15%.

04 — TAKEAWAYS

Solution composition dictates long-term maintenance

- 1 Supplementing the warming solution does not alter implantation on Day 15.
- 2 Enriched media protect against early embryonic loss between Day 15 and Day 60.
- 3 Post-vitrification protocols must optimise long-term survival, not Day 15 outcomes alone.

CONCLUSION

Warming solution composition may influence pregnancy maintenance after vitrification of equine ICSI-derived embryos.

LIMITATIONS AND IMPLICATIONS

Lack of adjustment for biological confounders may have biased the results; controlled randomised studies are needed.

Botupharma
Escolha inteligente.