

## 1 INTRODUCTION

Previous studies have shown that abnormal (slow or fast) cleaving embryos are associated with low implantation rates.

The speed of cleavage is an important factor in embryonic development (Huiqun et al., 2015)

Embryos cleaving either too fast or too slowly have been associated with compromised developments (Ziebe et al., 1997; Alikani et al., 2000).

Embryo with lagging or rapid cleavage have high rates of chromosomal abnormalities and decreased implantation rates (Sara, J.D., et al., 2006).

## OBJECTIVE

This study was carried out to assess the correlation between the rate of cleavage and the implantation potential of both fresh and vitrified-warmed blastocysts.

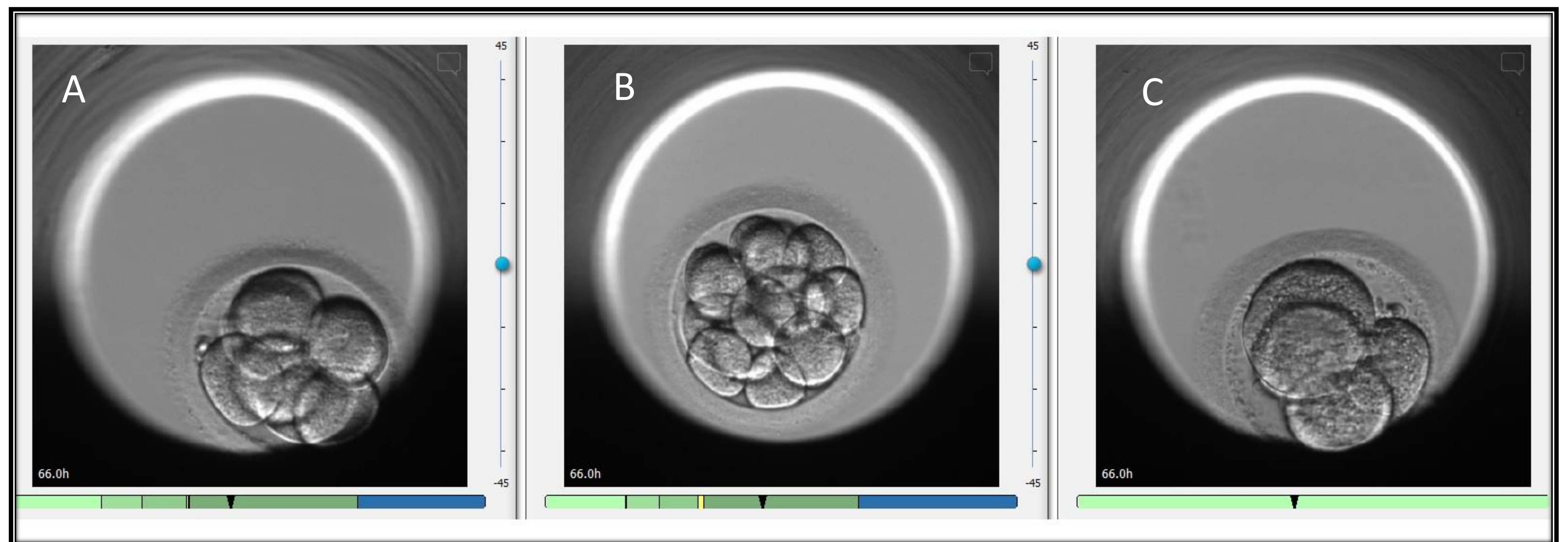
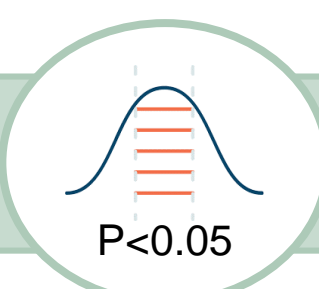


Figure 1. Illustrates the groups of cleavage rate at 66 hours. A: Normal (8 cells), B: Fast (14 cells) and C: Slow (4 cells).

## 3 METHODOLOGY

All blastocyst transfers, both fresh (n=96) and vitrified-warmed (n=454) from the year 2015 to 2017 in women ≤ 40 years old were analyzed in the retrospective study.

The cleavage rate of Day 3 embryo was divided to 3 groups: Slow (≤ 4 cells), Normal (5 – 9 cells) and Fast (≥ 10 cells). Following extended culture, the most optimal quality blastocysts (good or fair) were either transferred or vitrified for a subsequent vitrified-warmed transfer.



### Statistical Analysis

The relationship between implantation rate and blastocyst transferred were analyzed using chi-square test.

## 4 RESULTS AND DISCUSSION

The implantation rates of blastocyst(s) transferred fresh from the different groups were 0.0% (Slow), 37.2% (Normal) and 29.4% (Fast). For vitrified-warmed blastocyst(s), the implantation rates were: 41.7% Slow, 36.6% Normal and 37.0% Fast.

No significance difference was found in the rate of implantation of blastocyst transferred from fresh and vitrified-warmed from slow, normal and fast groups, (p<.01).

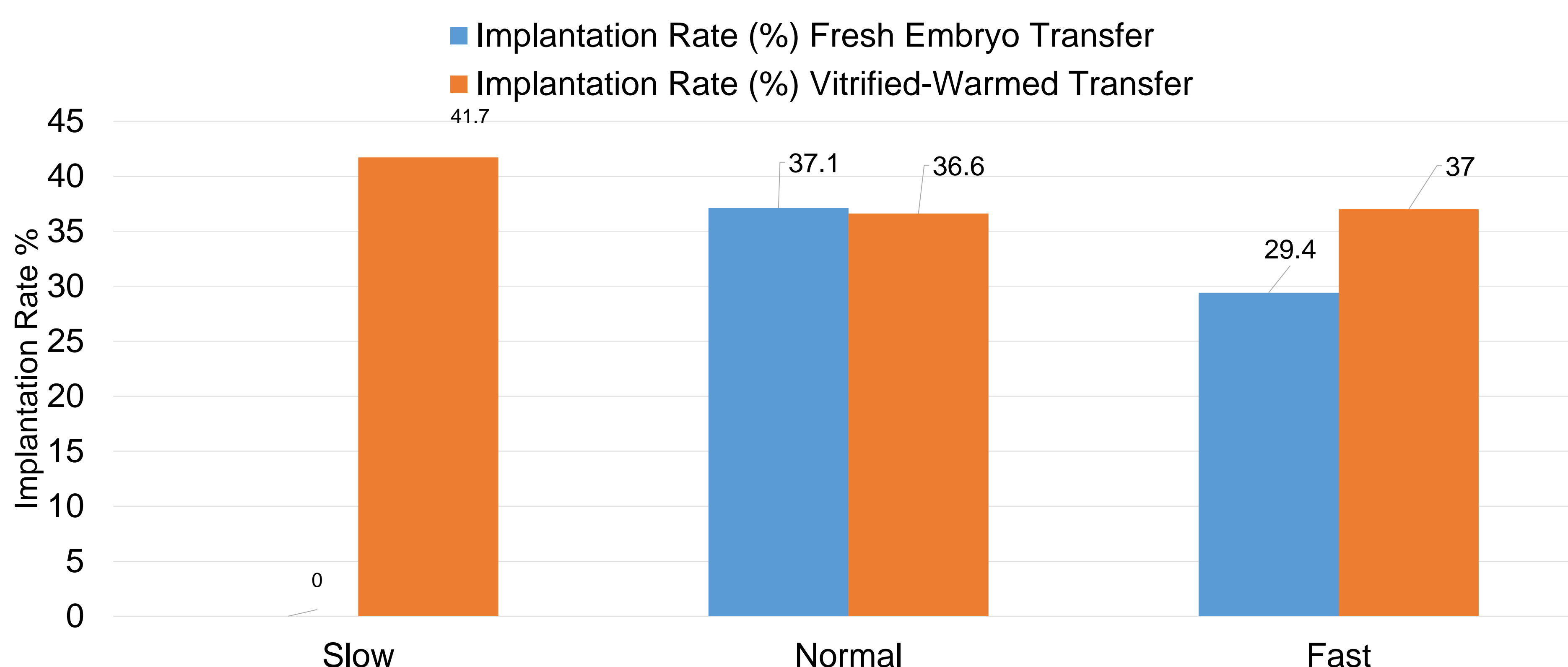


Figure 2. Shows the correlation between rate of cleavage and the implantation rates of both fresh and vitrified-warmed blastocyst transfers. X axis represents the implantation rate. The blastocyst were categorized into : Slow (≤ 4 cells), Normal (5 – 9 cells) and Fast (≥ 10 cells).

## CONCLUSION

Our study suggests that abnormally slow or fast cleavers have similar implantation rates compared to normal cleavers, as long these embryos develop into viable blastocysts suitable for transfer.

As such, abnormally slow or fast cleaving embryos should be subjected to extended culture before being considered for transfer or vitrification.

## 6 REFERENCES

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