

Stylet Use – Does It Lower Euploid Blastocyst Pregnancy Rates?



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BACKGROUND

Success determinants of In Vitro Fertilization (IVF) include patient age, oocyte yield, and degree of embryonic development; however, the ultimate crucial step is atraumatic placement of the embryo into the uterus.

Technically challenging embryo transfers can contribute to pregnancy failure. Existing literature subjectively categorize embryo transfers as easy or difficult, and while some have attempted to make objective criteria and tools for classifying transfers, no consensus currently exists [1].

Stylet use is universally acknowledged as a descriptor for difficult embryo transfer, yet little is known about euploid embryo transfer outcomes with and without stylet use [2-5].

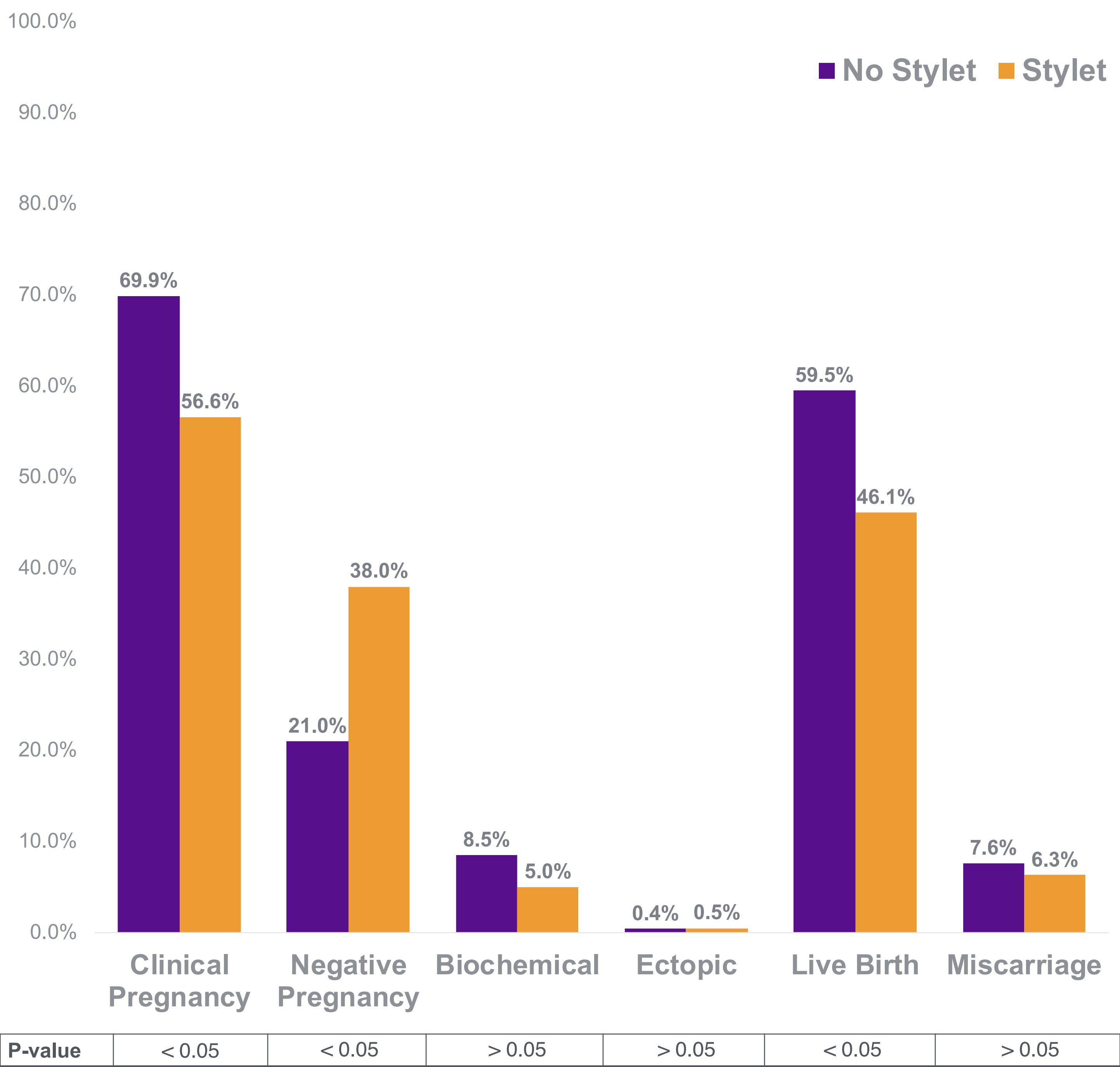
OBJECTIVE

To determine if stylet use during embryo transfer impacts pregnancy and live birth rates from euploid frozen embryo transfers

MATERIALS AND METHODS

Design and setting: Single center retrospective cohort study at academic fertility clinic from January 1, 2014 – August 30, 2020
Patients: all non-canceled euploid frozen embryo transfer cycles
Intervention: use of stylet during embryo transfer
Main outcomes: clinical pregnancy and live birth rates
Statistical analysis: Chi-square and Fisher’s exact tests, p < 0.05 considered significant

Pregnancy outcomes of euploid embryo transfers



RESULTS

3239 euploid frozen embryo transfers were included, with **93.2%** (3018/3239) not requiring stylet for transfer, and **6.8%** (221/3239) requiring stylet for transfer.

Clinical pregnancy rate for non-stylet transfers was **69.9%** (2111/3018) compared to **56.6%** (125/221) for stylet transfers (p<0.05).

Live birth rate per embryo transfer for non-stylet transfers was **59.5%** (1672/2810) compared to **46.1%** (95/206) for stylet transfers (p <0.05).

Live birth rate per clinical pregnancy for non-stylet transfers was **79%** (1672/2111) compared to **76%** (95/125) for stylet transfers (p>0.05).

Biochemical, ectopic/heterotopic, and miscarriage rates were not statistically different between non-stylet and stylet transfers.

CONCLUSIONS

Use of stylet in a euploid embryo transfer results in lower clinical pregnancy and live birth rates. When a clinical pregnancy is achieved, pregnancy outcomes are similar, suggesting a stylet appears to influence implantation more than continuation of pregnancy. This warrants caution in utilization of stylet during embryo transfers when it can be avoided, although we recognize a difficult transfer may require its use.

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