

ZYMÖT™ INCUBATION TIMES IN ICSI PROCEDURES: A REAL-WORLD ANALYSIS



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OBJECTIVES

The objective of this study was to investigate the incubation timings of a sperm separation device (ZyMöt™, CooperSurgical, USA) before ICSI among clinics.

MATERIAL & METHODS

A total of 8,850 ZyMöt incubation times, corresponding to as many sperm preparation, were collected through an electronic witnessing platform (RI Witness IQ™, CooperSurgical, USA) between 2021 and 2025 from 43 clinics in 10 countries.

Incubation times below 5 and above 60 minutes were excluded as a measure of quality control. A string of upstream and downstream witness points was parsed to identify the type of fertilization, and ICSI was selected.

Data were analyzed by Kruskal-Wallis and one-way ANOVA, a p-value <0.05 was considered significant. Quartile coefficients of dispersion were also calculated.

CONCLUSIONS

Real world incubation times in ZyMöt for ICSI presents significant variability among clinics, with some exhibiting a pattern of use indicative of process standardization. The considerable use of approximately 10 minutes incubation times may indicate that this time is sufficient to select sperm for ICSI in a subpopulation of patients.

RESULTS

Figure 1. Distribution of procedure times in individual clinics with box-and-whisker plots illustrating variation in procedure duration and color coding to represent clinic groups. X: Each individual clinic included; Y: Incubation time

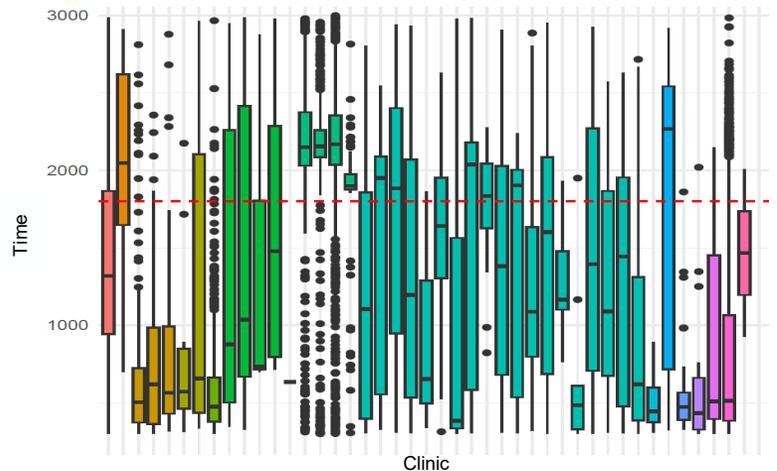
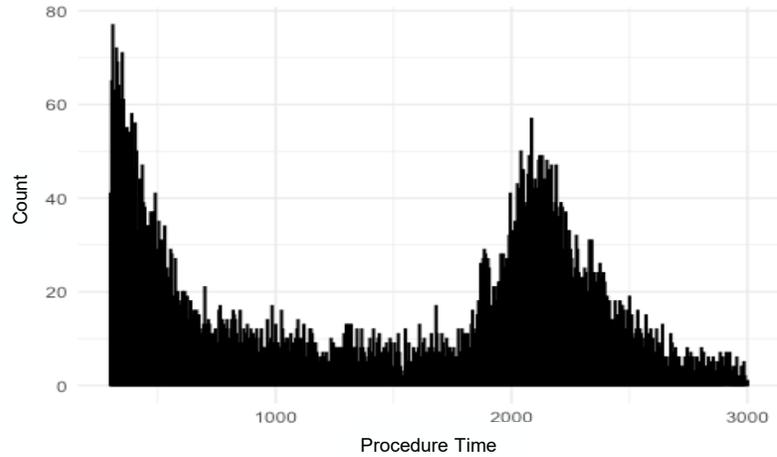


Figure 2. Distribution of procedure times in all clinics. X: length of procedure in seconds; Y: counts



The average incubation time in ZyMöt was 24,30 ± 13,34 (Range: 5,0-49,59) minutes.

Average incubation times varied significantly between clinics, with the shortest time being 8,26 ± 3,14 minutes and the longest 35,0.6 ± 6,33 minutes (p<0.05).

Across clinics, we observed meaningful differences not only in average incubation durations, but also in the dispersion of incubation times. Median incubation times in ZyMöt ranged from 6,25 to 37,47 minutes (p<0.0001; Fig. 1).

The quartile coefficients of dispersion for each clinic further supported these differences with values ranging between 0.03 to 0.65 across clinics. Whereas within some clinic chains, the variation in coefficients of dispersion was smaller with values ranging from 0.03 to 0.08 over 4 sites. This suggests process standardization.

Additionally, we identified two peaks of incubation times in ZyMöt, one around 30 minutes, which comprised 38.6% of cycles. A second peak was observed between 5-10 minutes, representing 27.2% of cycles (Fig. 2). Furthermore, 15 of the 43 clinics had an average incubation ≤ 15 mins, while 6 clinics had an average incubation ≥ 30 minutes.