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How do age at oocyte cryopreservation (OC) and treatment indication affect the cumulative live birth rates per warm cycle?

Prof. Ibrahim Mahrous, Al Azhar University

Dr. Mohamed El Sherbiny, MOH

What Is Known Already?

The effectiveness and outcome of any fertility treatment are intrinsically linked to key pivotal factors, most notably the woman's age at the time of oocyte collection [1-3]

A recent metanalysis, focusing on the results of OC in patients undergoing fertility preservation solely to prevent age-related fertility decline, has underscored the significance of age on outcome. Subgroup analysis based on age at OC revealed 52% live birth rate (LBR) among patients younger than 35, contrasting with 19% LBR among those over 40. [4].

Another factors are the specific treatment of malignant or non-malignant medical conditions [1&5]

It is possible that factors connected to the particular cancer or compromised immunological health may impact a stimulation cycle or the oocyte quality (Fabiani et al.,[6&7].

Nonetheless, data describing the outcome of warmed oocytes is less clear.

What Is New?

A recent retrospective data analysis of 4577 OC cycles [8] from 3164 women treated between January 2014 and December 2023. OC cycles were categorized by age at oocyte retrieval and treatment indication: cancer diagnosis, other medical conditions and non-medical reasons. This data reported that:

1-The mean age at OC was lowest in the cancer group (31.3 ± 6.2 years) compared to other medical (34.4 ± 4.5 years) and non-medical (36.2 ± 3.1 years) groups ($P<0.01$).

2-During the study period, 647 warmed oocyte cycles were conducted. Oocyte survival rate was lower in the cancer group (81.5%) compared with other medical (85.3%) and non-medical (83.3%) groups ($P<0.01$).

3-The CLBR per started warm cycle was highest in patients under 35 years old (49.0%), followed by those aged 35-40 (36.8%) and lowest in patients over 40 (17.2%) ($P<0.01$). Although CLBR appeared lower in the cancer group (35.6%) compared with other medical (36.0%) and non-medical (39.3%) groups, the differences did not reach statistical significance ($P>0.05$)

Implications of This Findings

These findings reinforce the importance of early OC, when age is a controllable factor, to maximize fertility preservation outcomes. While cancer patients showed slightly lower success rates, OC remains a valuable option for these individuals.

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