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P-080 Intrauterine insemination (IUI) success rates in patients with suboptimal total processed motile sperm count (TPMSC) using a second consecutive semen sample

A. Vergara1, T. Mergudich1, N. Rojas1, D. Pesse1, M. Soto1, J. Avila1, C. Ledezma1, R. Ortiz1, A. Ortiz1, S. Barrientos1

1Pontificia Universidad Católica de Chile, Ginecología y Obstetricia, Santiago, Chile

Study question: Is it effective to request a second consecutive semen sample in patients with less than 1 million TPMSC in a first semen sample for IUI?

Summary answer: In men with TPMSC under one million, the issuing of a second consecutive sample reached pregnancy rates similar to those published for IUI.

What is known already: IUI offers a comparable cumulative live birth rate in 3-4 cycles compared to IVF and can be preferred as a cost-effective first-line treatment in mild male factor or unexplained infertility. The quality of the processed semen sample is an important factor for the IUI success.

The WHO recommends an abstinence period to ensure best quality of semen samples. However, it has been observed that when men with moderate male factor who are unable to meet the minimum requirements for IUI are asked to produce a second sample better counts are obtained; questioning the time correlation between abstinence and semen quality.

Study design, size, duration: This was a retrospective study conducted in the reproductive medicine unit of a private hospital in Chile between July 2015 and March 2021. All patients who underwent IUI in the study period that had an TPMSC less than 1 million in the eyaculate and to whom a second consecutive sample was requested were included.

Participants/materials, setting, methods: 118 patients who underwent 140 IUI cycles were included in the study. All the patients with an PMSC under 1 million at the time of the IUI were requested a second consecutive semen sample within an hour or two from the previous eyaculate. The second samples were processed and used for insemination. The primary outcome was pregnancy rate. The secondary outcomes were semen quality (TPMSC of first and second semen samples).

Main results and the role of chance: Between 2015 and 2021 there were 140 IUI cycles in which a second consecutive semen sample was requested, including 118 patients. Overall 17 pregnancies were achieved. The pregnancy rate per cycle was 12.14% and the pregnancy rate per patient was 14.4%. The live birth rate per patient was 10.2%.

Regarding the sperm sample analysis, the median TPMSC of the first semen sample was 261.437. The median PMSC of the second consecutive sample was 7.315.000. 126 patients had an TPMSC of 0 in the first semen sample while only 9 patients had an IMSC of 0 in the second sample. In five cases a third consecutive sample was requested of which 4 patients had their cycles canceled because they did not meet the target PMSC. One patient had an TPMSC of 1.687.000 in the third sample.

Finally, of the 118 patients who did not meet the requirements for IUI with the first sample, only 19 cycles were canceled.

Limitations, reasons for caution: The study has the limitation of being a retrospective and descriptive study with no control group. Also the group is heterogeneous because it includes patients with different female factors for infertility.

Wider implications of the findings: In developing countries and low-income settings the IUI remains a more accessible alternative in patients with infertility. Routinely recollecting a second semen sample in men with TPMSC < 1 million would reduce cycle cancellation rates due to not achieving an optimal TPMSC, reaching pregnancy rates similar to those published for IUI.

Trial registration number: Not applicable