**Comparison of the efficacy of different hormonal triggers in controlled ovarian stimulation**

Boncristiano, J.¹ Garavini, E.C¹ Moura, B.R.L.¹ Chaves, R,A.¹

Gerar InVitro¹

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**Objective:** The objective of this study is to compare the oocyte retrieval rate from observed follicles, the number of obtained oocytes, and their maturation between two medications used as ovulation triggers: the GnRH agonist Acetate Triptorelin and the HCG Alfacoriogonadotropin.

**Methods**: For this retrospective study, we analyzed 8,491 oocytes from 760 cycles of assisted reproductive treatment and oocyte cryopreservation conducted at four units of the Gerar InVitro Human Reproduction Institute from January 2021 to April 2023. All cycles with controlled ovarian stimulation were included and divided into three groups based on the trigger analyzed. The study group received either Alfacoriogonadotropin or Triptorelin acetate, while the control group included all triggers used. The first group aimed to analyze Alfacoriogonadotropin, considering parameters such as oocyte retrieval rate, average number of oocytes, and oocyte maturation rate. The second group aimed to analyze Triptorelin acetate, considering the same parameters. The third group served as the control group, encompassing all routine triggers and evaluating the mentioned parameters. Results from the Alfacoriogonadotropin and Triptorelin acetate groups were compared to the control group using the chi-square test.

**Results:**When comparing three groups, Alfacoriogonadotropin (group 1), Triptorelin acetate (group 2), and control, significant differences were observed. Group 1 showed no significant differences compared to the control in terms of oocyte retrieval rate, number of oocytes, and maturation. On the other hand, group 2 exhibited a higher retrieval rate (77.31% vs. 65.82% in control) and a greater average number of obtained oocytes (14.5 vs. 7.9 in control). However, there were no significant differences in oocyte maturation between group 2 and the control. These results suggest that Triptorelin acetate can be used in patients with a high number of follicles without affecting their maturation.

**Conclusion:** In conclusion, triptorelin acetate proves to be a promising option as an effective and safe trigger, without negatively affecting the proportion of mature oocytes in patients with a high number of follicles. However, further studies are needed to confirm these findings, explore underlying mechanisms, and consider individual patient factors.

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|   | **Grupo 1** | **Grupo 3** | **VALOR DE P** |
| **Alfacoriogonadotropina** | **Grupo Controle** |
| N (%) | Desvio Padrão | N (%) | Desvio Padrão |
| **n° Amostral** | 274 |   | 133 |   |   |
| **Media de idade** | 37 | ±5 | 36 | ±5 |   |
| **Tx de recuperação**  | 79,36% | ±41% | 65,82% | ±35,82% | 0,273 \*G1/G3 |
| **Media de oocitos**  | 8,8 | ±9,7 | 7,9 | ±6,34 | 0,673 \*G1/G3 |
| **Tx de maturação**  | 78,50% | ±20,61% | 79,23% | ±19,46% | 0,822 \*G1/G3 |
| \* Quando comparamos o grupo 1 com o grupo controle, não foram encontradas diferenças estatisticamente significativas. |
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|   | **Grupo 2** | **Grupo 3** | **VALOR DE P** |
| **Acetato de Triptorrelina**  | **Grupo Controle** |
| N (%) | Desvio Padrão | N (%) | Desvio Padrão |
| **n° Amostral** | 333 |   | 133 |   |   |
| **Media de idade** | 33,3 | ±5 | 36 | ±5 |   |
| **Tx de recuperação**  | 77,31% | ±41% | 65,82% | ±35,82% | 0,002\*\*G2/G3 |
| **Media de oocitos**  | 14,5 | ±9,8 | 7,9 | ±6,34 | < 0,001\*\*G2/G3 |
| **Tx de maturação**  | 78,60% | ±23,85% | 79,23% | ±19,46% | 0,707\*G2/G3 |
| \*\* Quando comparada a média de óvulos coletados e a taxa de recuperação entre o grupo 2 e o grupo controle, foram observadas diferenças estatisticamente significativas. |
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