

Effect of letrozole doses on clinical pregnancy rates in polycystic ovary syndrome: a systematic review and network meta-analysis

Objective

To compare the effects of different doses of letrozole (LE) alone (2.5 mg, 5 mg, 7.5 mg, 20 mg) or in combination with clomiphene citrate (CC) or human gonadotropin (HMG) on pregnancy outcomes in PCOS patients.

Study Design

- Systematic review & network meta-analysis
- No of studies- 30 RCTs (2011-2024)
- Total 11 intervention strategies were analyzed.

Population

3663

Infertile women diagnosed with PCOS.
 Age - Average 29 years
 BMI - 21.36 to 29.09 kg/m²
 Infertility duration- 4.4 years

Efficacy Outcome

| Treatment | Standardised mean difference (95% CI) | Odds Ratio (OR) |
|-----------------|---------------------------------------|-----------------|
| 2.5 mg LE | | 1 |
| 2.5 mg LE + C | | 2 |
| 20 mg LE | | 0.86 |
| 5 mg LE | | 1.99 |
| 5 mg LE + C | | 5.39 |
| 7.5 mg LE | | 1.89 |
| 7.5 mg LE + C | | 7.6 |
| 2.5 mg LE+HMG | | 1 |
| 20 mg LE + HMG | | 1.72 |
| 5 mg LE + HMG | | 1.12 |
| 7.5 mg LE + HMG | | 1.19 |

Interpretation of odds ratio (OR) values

OR > 1 → Favors the intervention (higher odds of clinical pregnancy compared to control).
 OR = 1 → No difference between intervention and comparator.
 OR < 1 → Favors the comparator (lower odds of clinical pregnancy with intervention).
 Clinical Relevance → Larger OR values (above 1) indicate stronger treatment effect.

Summary

- Letrozole 5 mg & 7.5 mg (monotherapy)** – Demonstrated improved clinical pregnancy rates, reinforcing dose optimization as a key strategy.
- Letrozole 7.5 mg + Clomiphene** – Showed enhanced pregnancy outcomes, suggesting a potential synergistic benefit.
- Higher-dose Letrozole + HMG** – Did not yield statistically significant improvement in pregnancy rates.

Ref: Sun Y, Wang J, Chen G. Effect of letrozole doses on clinical pregnancy rates in polycystic ovary syndrome: a systematic review and network meta-analysis. *Gynecol Endocrinol.* 2025;41(1):2504977. doi:10.1080/09513590.2025.2504977

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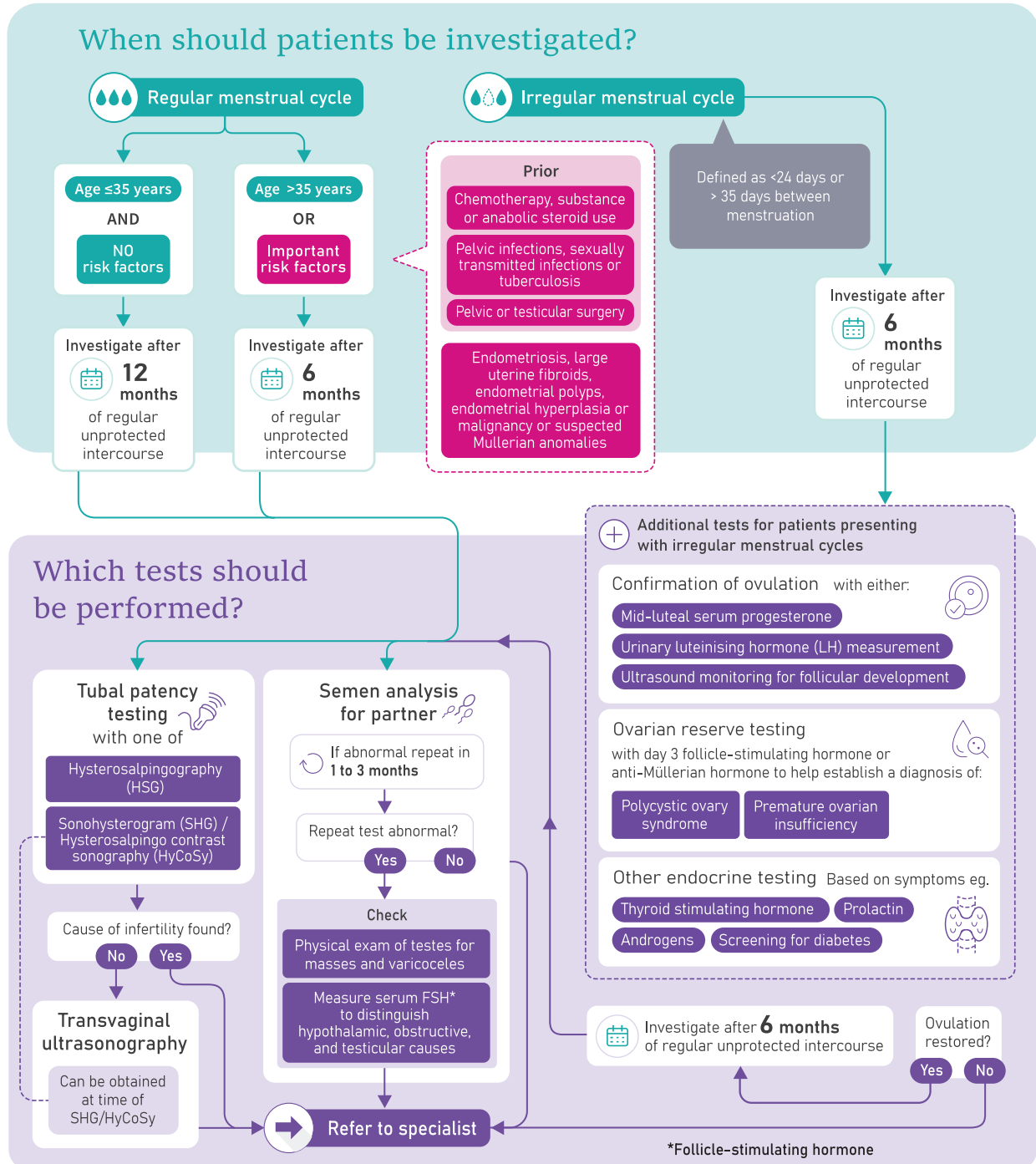
Letrozole USP 2.5 mg

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If pregnancy has not occurred after optimisation of patient health and timing of intercourse, further investigation may be required. This graphic presents a suggested approach to the initial assessment of infertility, with consideration given to providing the most important and clinically relevant tests.



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