

Introduction

Letrozole, which was initially devised to treat hormone-sensitive breast cancer, has become increasingly popular for ovulation induction, especially among women with polycystic ovary syndrome (PCOS). Letrozole lowers levels of estrogen which helps trigger the release of follicle-stimulating hormone (FSH) to promote follicular development. Its effectiveness is equal to clomiphene citrate (CC) with a lower risk ratio of multiple pregnancies. However, while hyperstimulation usually correlates with fewer mature follicles and lower rates of multiple gestations, twins are still a possibility; and exposed to obstetric complications such as preterm labor and gestational diabetes. This case report demonstrates a rare case of twin pregnancy after Letrozole.

Objective

To present a rare case of recurrent twin pregnancies following ovulation induction with Letrozole in a PCOS patient with familial twin history, emphasizing the need for individualized fertility treatment and close monitoring.



[Image of dichorionic diamniotic twin gestation]. (n.d.). ScienceDirect.

Case Report

A 29-year-old woman G4P2L4A1 with a history of secondary infertility and PCOS, presented at 10+2 weeks gestation. She had undergone ovulation induction with Letrozole and two doses of FSH.

Her medical background included:

- PCOS, with irregular cycles since menarche, hirsutism, and oligomenorrhea.
- Hypothyroidism, on levothyroxine 100 mcg daily.
- High BMI of 39.
- History of two cesarean sections, both preceded by cervical cerclage.
- Positive family history of twins and married to a twin.

Obstetric history:

G1: Twin pregnancy via Letrozole, miscarriage at 14 weeks requiring D&C and transfusion.

G2: Twin pregnancy via Letrozole, term delivery by cesarean section with cerclage.

G3: Twin pregnancy via Letrozole, term cesarean section with cerclage.

G4 (current): Twin pregnancy conceived with Letrozole + FSH; cervical cerclage placed at 14 weeks.

Discussion

Letrozole is widely used for ovulation induction, particularly in PCOS, due to its lower risk of multiple gestations compared to clomiphene citrate. However, in this case, recurrent twin pregnancies occurred despite Letrozole use—likely due to:

- Increased ovarian sensitivity in PCOS.
- Familial predisposition to twinning.
- Adjuvant FSH administration, enhancing follicular response.

This case challenges the assumption of low twin risk with Letrozole and highlights the need for:

- Careful individualized treatment protocols.
- Close ultrasound monitoring during stimulation.
- Consideration of genetic factors in ovulation induction planning.

Conclusion

Letrozole is considered a safer ovulation induction agent regarding multiple gestations. However, in PCOS patients with a family history of twins, recurrent twin pregnancies may still occur. Personalized protocols and vigilant monitoring are crucial to balance efficacy with safety in fertility treatments.

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Parameter	Letrozole	Clomiphene Citrate
Mechanism	Aromatase inhibitor	Selective Estrogen Receptor Modulator
Twin rate	Low (~3-5%)	Higher (~8-12%)
Ideal for	PCOS, CC resistant women	Non-PCOS
Safety Profile	Fewer side effects, shorter half-life	More side effects, longer half-life

