

FACT SHEET

IVF Poor Ovarian Response and Diminished Ovarian Reserve

Definitions

Poor Ovarian Response (POR): A limited reaction by the ovaries to hormonal stimulation during IVF treatment.
Diminished Ovarian Reserve (DOR): A reduced number of eggs available within the ovaries.

Context and Challenges

The effectiveness of in vitro fertilisation (IVF) largely depends on the ability to retrieve multiple eggs in a single cycle:

- In conventional IVF cycles, it is often possible to obtain more eggs at once than would naturally be released over the course of an entire year.
- This increase in available eggs is a primary reason why IVF success rates are two to three times higher than those of natural cycles or intrauterine insemination (IUI).

However, for patients with poor ovarian response (POR), this central advantage of IVF is limited:

- The ovaries do not respond sufficiently to hormonal stimulation.
- Despite intensive medication, only a few follicles mature (≤ 3).
- Consequently, the number of retrievable eggs is very limited.

Impact of POR on IVF Treatment:

- IVF / ICSI (intracytoplasmic sperm injection) may still play a central role, especially when no other options are available.
- The typical advantages of IVF cannot be fully realised.
- The (cumulative) chances of success are generally lower compared with standard IVF cycles.

Despite these limitations, IVF often remains the best available option for women with POR. However, it requires a carefully tailored treatment strategy and realistic expectations regarding the likelihood of success.

Causes

The primary causes of POR and DOR include:

- Advanced maternal age
- Previous ovarian surgery
- Chemotherapy or radiotherapy
- Genetic factors or inherited conditions

In many patients, the cause remains unknown.

Treatment Approaches

Individualised treatment protocols

- Tailoring stimulation protocols to your specific situation
- Mini-IVF or natural cycle IVF

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Conventional stimulation protocols

- Higher doses of gonadotropins (for selected patients)
- Individually adapted protocols
- Clomiphene citrate and letrozole

Adjuvant therapies (off-label use)

- Coenzyme Q10 (CoQ10)
- Dehydroepiandrosterone (DHEA, available via international pharmacies)
- Growth hormone (GH) – due to extremely high costs, this is not commonly used in routine practice
- Pretreatment with testosterone

Complementary medicine approaches

Egg donation

Key Factors

- Age: Younger patients have a higher chance of success.
- Number of eggs retrieved: A higher number of eggs increases the likelihood of a live birth.
- Individualised treatment strategies based on POSEIDON (patient-oriented strategies encompassing individualised oocyte number) criteria.
- Early counselling and diagnostics when POR or DOR is suspected.
- Personalised treatment planning based on age and ovarian reserve tests.
- Realistic counselling on success rates, particularly for women over 40.
- Consideration of alternatives such as egg donation, particularly for older women with repeated unsuccessful IVF attempts.
- Open dialogue about different treatment options, including innovative approaches.

Classifications

Bologna criteria:

To meet these criteria, at least two of the following must apply:

- Advanced maternal age (≥ 40 years) or other risk factors for POR
- Previous poor ovarian response (≤ 3 eggs after conventional stimulation)
- Abnormal ovarian reserve test (e.g., AFC $< 5-7$ or AMH $< 0.5-1.1$ ng/ml)

POSEIDON criteria:

- Group 1: Women < 35 years with normal ovarian reserve and unexpected poor or suboptimal response
- Group 2: Women ≥ 35 years with normal ovarian reserve and unexpected poor or suboptimal response
- Group 3: Women < 35 years with low ovarian reserve
- Group 4: Women ≥ 35 years with low ovarian reserve