PIPADOR REVISION

MRCOG Part 1 Revision Notes

Premature Ovarian Failure

ENDOCRINOLOGY • LECTURE 201

VISUAL EXAMINATION REVISION NOTES

2026 Edition

201

MRCOG PART 1 REVISION NOTES | ENDOCRINOLOGY

Premature Ovarian Failure

Premature ovarian insufficiency — definition, causes, investigation, consequences and management

< 40 yr	≈ 1–3%	FSH > 25	5–10%
Loss of ovarian activity	Women affected	IU/L with ≥ 4 months oligo/amenorrhoea	Spontaneous pregnancy rate

■ **KEY FACTS: Learning objectives**

- Define premature ovarian failure/insufficiency (POI) and describe its causes.
- Describe the diagnosis and investigation (ESHRE).
- Describe the long-term consequences and management: hormone replacement, bone, cardiovascular and psychological health, fertility.

201.1 Definition and causes

Premature ovarian insufficiency (preferred to 'failure', since ovarian function may fluctuate): loss of ovarian activity before **40 years**, with **oligo/amenorrhoea for ≥ 4 months** and **raised FSH > 25 IU/L** (ESHRE; earlier guidance required two measurements ≥ 4 weeks apart — follow current ESHRE/local criteria). Early menopause = 40–45 years.

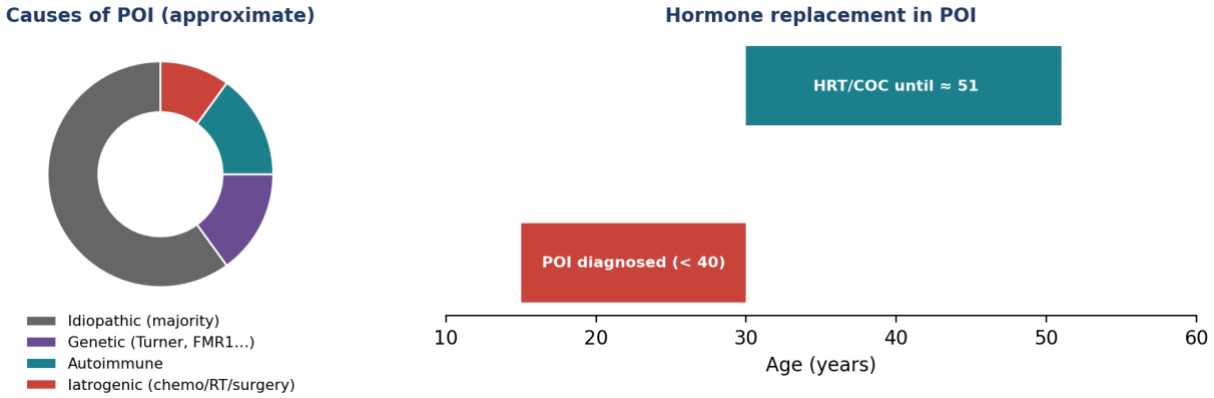


Figure 201.1 — Causes of POI and duration of hormone replacement

Category	Examples
Genetic	Turner syndrome (45,X and mosaics), FMR1 premutation (fragile X carriers; 55–200 CGG repeats), X-chromosome deletions/translocations, galactosaemia, BMP15, FOXL2 (BPES)
Autoimmune	Autoimmune oophoritis — adrenal (21-hydroxylase) antibodies (APS), thyroid autoimmunity, type 1 DM, Addison's
Iatrogenic	Chemotherapy (alkylating agents), pelvic radiotherapy, bilateral oophorectomy, ovarian surgery (endometriomas), uterine artery embolisation
Infective / other	Mumps oophoritis, TB; smoking (earlier menopause)
Idiopathic	Majority

201.2 Investigation

- **FSH** (and oestradiol) — raised FSH with low E2; **AMH** low (supportive, not diagnostic alone); exclude pregnancy, prolactin, TSH.

- **Karyotype** (all women with non-iatrogenic POI) and **FMR1 premutation testing**; **21-hydroxylase (adrenal) antibodies** and **TPO antibodies**.
- **DXA** bone density at diagnosis; cardiovascular risk assessment; pelvic ultrasound (if needed).

201.3 Consequences

Bone	Cardiovascular	Brain	Sexual / GSM
Osteopenia/osteoporosis, fracture	↑ Ischaemic heart disease, mortality	Cognition, dementia risk; mood	Dryness, dyspareunia, libido

Plus **infertility**, psychological distress and reduced life expectancy if oestrogen is not replaced. Associated conditions: **Turner** (aortic dilatation/dissection, bicuspid valve, hypertension, hypothyroidism), **FMR1 premutation** (FXTAS in older males; offspring risk of fragile X).

201.4 Management

Element	Management
Hormone replacement	HRT or combined hormonal contraception until at least the average age of menopause (≈ 51) — often higher oestrogen doses than postmenopausal HRT (e.g. estradiol 2 mg oral / 100 µg patch); progestogen if uterus present; HRT may be better for bone/BP than COC; HRT is not contraceptive — counsel
Risks	HRT in POI replaces physiological hormone — breast cancer risk is not increased above that of women of the same age with normal ovarian function
Bone and heart	Weight-bearing exercise, calcium/vitamin D, stop smoking; DXA follow-up; manage cardiovascular risk
Androgens	Testosterone for low libido (specialist)
Fertility	Spontaneous pregnancy ≈ 5–10%; oocyte donation (IVF) is the most successful route; adoption, surrogacy; counselling
Fertility preservation	Before gonadotoxic treatment: oocyte/embryo vitrification, ovarian tissue cryopreservation (prepubertal or urgent cases); GnRH agonist during chemotherapy (some protection)
Turner pregnancy	Pre-pregnancy cardiology (MRI aorta) — aortic dissection risk; aortic size index > 2.5 cm/m² contraindicates pregnancy; single embryo transfer
Psychological	Specialist support, patient organisations (e.g. Daisy Network)

201.5 Must-know summary

■ EXAM TIP

- POI: < 40 yr, ≥ 4 months oligo/amenorrhoea, **FSH > 25 IU/L**.
- Investigate: **karyotype, FMR1 premutation, adrenal & thyroid antibodies**, DXA.
- Mostly idiopathic; genetic (Turner, FMR1), autoimmune, iatrogenic.
- **HRT/COC until ≈ 51** — protects bone, heart, brain; not risk-equivalent to postmenopausal HRT.
- Fertility: spontaneous 5–10%; **egg donation**; Turner → cardiology before pregnancy.

■ MNEMONIC / MEMORY AID

POI work-up — 'Karyotype, Fragile X, Antibodies, Bone'.