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Section 3

Mock examination circuit

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1. Simulated colleague task

Candidate's instructions

This is a simulated colleague task assessing:

- Communication with colleagues
- Patient safety
- Applied clinical knowledge

You are an ST5 specialist registrar. The person sitting in front of you is a first-year senior house officer who has been given the task of updating the patient information leaflet on ovulation induction (see page 158) by the clinical lead for the fertility unit. The trainee has looked through several publications and is not sure about the role of metformin as an ovulation induction agent for women with polycystic ovary syndrome. They would like your help to understand a plot included in the recent systematic review which compared the use of clomifene alone for ovulation induction versus a combination of clomifene with metformin as an add on drug (**Figure 3.1**). Your task is to explain to the colleague about the forest plot in the systematic review and describe the evidence levels used in producing clinical guidelines or protocols.

You have 10 minutes in which you should:

- Teach the trainee about a forest plot
- Support their learning needs
- Answer any questions the trainee asks

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Ovulation Induction

Information for patients and carers

London Fertility Clinic

1. What is ovulation induction?

Ovulation induction is a form of fertility treatment which stimulates your body to develop and release an egg so that you can conceive. It is a simple and effective treatment for women who do not ovulate regularly. You will need to take medication in one of the following ways:

- Tablets (Clomifene): This is a tablet that you take by mouth for 5 days, preferably in the evening, starting on either day 2, 3 or 4 after the start of your period
- Injections (hMG): These are injected into the fat layer of the skin with a very fine needle. We will teach you or your partner how to do these injections. They are usually performed daily in the evening from day 3 of your period until ovulation (about 2 weeks)
- Infusion pump (GnRH): This is a specialist form of hormone treatment, given through the skin by a small device worn continuously

The best method for you will be explained by your doctor and nurse.

2. Are there any risks of ovulation induction?

Multiple pregnancies: Because this treatment stimulates the ovaries, there is a risk that you will release more than one egg and conceive a multiple pregnancy. Twins occur in about 1 in 10 pregnancies, compared to the average ratio of 1 in 80.

Ovarian hyperstimulation: This is a rare but serious complication of fertility drug treatment. This is when too many eggs are developing in the ovary, and you may develop symptoms of abdominal discomfort, bloating and nausea. Occasionally, these may require hospital admission.

Ectopic pregnancy: This is a pregnancy which develops outside the womb, usually in the fallopian tube. It occurs in about 1 in 100 pregnancies and is slightly more common in women undergoing fertility treatment. It can be dangerous because the fallopian tube may swell and burst causing bleeding.

3. What alternative treatments are available?

Any feasible alternative options will be discussed with you at your consultation.

4. What will occur during ovulation induction?

On the first day of the proper flow of your period you need to phone the clinic to inform us that you are having ovulation induction. If your period falls on a weekend please call the same number and leave a message on the answer phone, and we will return your call on the first working day.

You will take the medication as advised from day 2, 3 or 4 of your period. We will arrange an appointment for you to have a transvaginal ultrasound scan on day 8, 9 or 10 of the cycle. The scan will measure the number and size of your follicles (egg sacs). We will then advise you as to whether you need to return for further scans to estimate the day of ovulation and consider hCG trigger. You may be advised to use an ovulation prediction kit at home. You will be advised of the best days to have intercourse in order to become pregnant.

5. What should I expect after ovulation induction?

- One week after ovulation, you may be asked to have a blood test for progesterone, to confirm that the treatment has released an egg

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- Two weeks after ovulation you must do a pregnancy test. Please telephone us and let us know the outcome
- If the pregnancy test is negative, we will discuss further treatment for you as appropriate

6. Where can I get more information?

- Royal College of Obstetricians and Gynaecologists www.rcog.org.uk
- British Fertility Society www.britishfertilitysociety.org.uk
- Human Fertilisation and Embryology Authority www.hfea.gov.uk/cps/rde/xchg/hfea
- National Institute for Health and Clinical Excellence www.nice.org.uk

7. Contact details

The Fertility Clinic. Tel: 020 1111 1111.

9. How to find us

The Fertility Clinic is located on the Lower Ground Floor of Tooting NHS Hospital Trust, Tooting.

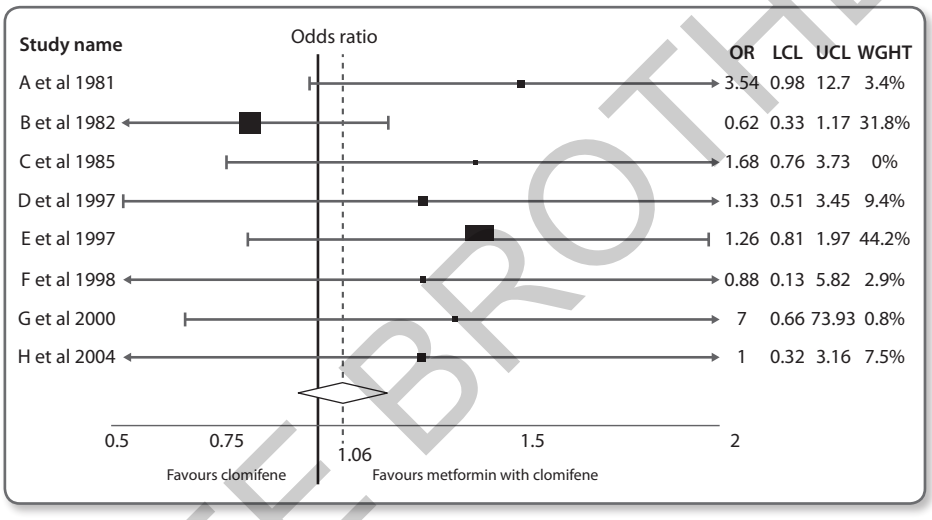

Figure 3.1 Forest plot comparing live birth rates between metformin combined with clomifene citrate treatment versus clomifene citrate alone. Heterogeneity: $Chi^2 = 9.23$, df = 6 (P = 0.16); $I^2 = 35\%$
Test for overall effect: Z = 0.94 (P = 0.35)

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Simulated colleague's instructions

You are a first-year senior house officer who is considering specialising in gynaecology. You have been given the task of updating the patient information leaflet on ovulation induction by the clinical lead for the fertility unit. You have looked through several publications and are not sure about the role of metformin as an ovulation induction agent for women with polycystic ovary syndrome. You would like help to understand one of the plots included in the recent systematic review (comparing the use of clomifene alone for ovulation induction versus a combination of clomifene with metformin as an add-on drug for ovulation induction).

You ask the specialist registrar to teach you more about this. You should ask:

- Can you tell me more about the forest plot and how to interpret it?
- What are these lines and diamonds in the figures?
- Do you think I should recommend metformin as an add on drug with clomifene for ovulation induction?
- What are the levels of evidence when producing a clinical guideline?

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Marking by examiner

Communication with colleagues

Examiner's comments		
Pass	Borderline	Fail

Patient safety

Examiner's comments		
Pass	Borderline	Fail

Applied clinical knowledge

Examiner's comments		
Pass	Borderline	Fail

Communication with patients and families

Lay Examiner's comments		
Pass	Borderline	Fail

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Notes for the examiner

Assess the ability of the candidate to teach forest plots to their junior colleague and explain the levels of evidence. Observe the candidate and whether they teach the interpretation of a forest plot using as simple language as possible, and whether they explain to the student why metformin does not appear to be of significant benefit as an add-on drug for ovulation induction when compared with clomifene alone for all patients.

Mark the candidate on the following regarding the explanation of forest plots:

- Provides explanation regarding purpose of the forest plot and meta-analysis
- Explains that the area of the square represents sample size of the study and diamond represents the overall effect estimate
- Explains concept of confidence intervals
- Explains that the larger the study sample size and narrower the confidence intervals, the higher the weight of the study
- Talks about the 'line of no effect' in the middle – when the diamond touches this line, there is no statistical difference in effect between intervention and control populations

The candidate should finish by providing information about the following levels of evidence:

1. Reference to high quality publications such as systematic reviews, meta-analyses and randomised controlled trials
2. Case-control or cohort studies
3. Case series or case reports
4. *Expert opinion*: The higher the level of evidence, the more reliable are the results of the study

Tips for passing this task

Counselling patients about the evidence available for safety and efficacy of a given treatment and the alternatives is an important aspect of clinical medicine. In this task, you are expected to talk about a forest plot using as simple language as possible and ensure the trainee understands the key concepts of how to read these plots. Make sure you talk about evidence levels and allow the trainee to ask questions.

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2 Structured discussion

Candidate's instructions

This task is a structured discussion covering:

- Communication with colleagues
- Patient safety
- Applied clinical knowledge

You are an ST5 registrar on the labour ward and you have just completed a forceps delivery successfully. Your junior colleague (ST3) wishes to ask you questions about forceps delivery. The examiner will have a discussion with you based on five questions.

You have 10 minutes in which you should answer the five questions asked by the examiner.

Examiner's instructions

Familiarise yourself with the candidate's instructions.

Use the following five questions as a basis for a discussion with the candidate about forceps delivery:

- Can you tell me more about the types of obstetric forceps?
- What are the indications for forceps delivery?
- What are the prerequisites for a forceps delivery? What does caput and moulding indicate?
- Describe how you will use the forceps and check that you have applied them correctly.
- Are there any problems that can occur? What would you do if delivery fails?

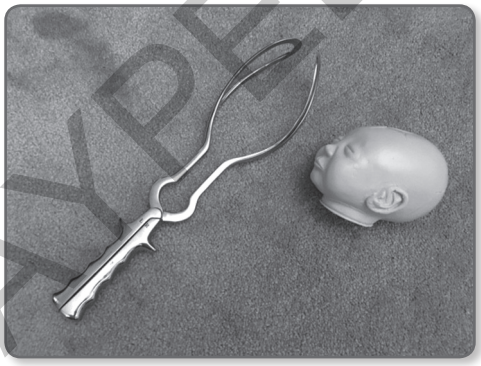

Figure 3.2 Forceps and model of fetal head.

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Marking by examiner

Communication with colleagues

Examiner's comments		
Pass	Borderline	Fail

Patient safety

Examiner's comments		
Pass	Borderline	Fail

Applied clinical knowledge

Examiner's comments		
Pass	Borderline	Fail

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Notes for the examiner

Score the candidate on their knowledge of the following:

- Operative vaginal delivery using obstetric forceps. A competent candidate should demonstrate their understanding of safe and effective use of forceps, and explain the principles involved in achieving successful operative vaginal delivery
- Assess the candidate's ability to ask for help in challenging clinical situations, and to re-evaluate the clinical situation and abandon efforts at forceps delivery in a timely manner when there is lack of progress

Mark the candidate based on the following discussion:

- Commonly used forceps include outlet forceps (Wrigley's) and mid cavity/low forceps such as Simpson's or Neville-Barnes'. Not so commonly used forceps are rotational (Kielland's) forceps – considerable experience and skill are required for the safe use of this instrument – and Piper's forceps after coming head of breech is part of delivery of a breech fetus
- The candidate should explain indications for forceps delivery such as fetal compromise in second stage of labour, control of after coming head of breech, maternal exhaustion or maternal medical problems
- Before forceps are applied, the cervix should be fully dilated, less than one-fifth of the fetal head should be palpable abdominally, fetal position confirmed, membranes ruptured, bladder emptied, appropriate consent obtained, and analgesia offered
- Caput refers to the soft tissue swelling of fetal scalp while moulding is overriding of fetal skull bones. Excessive caput and moulding suggest possibility of cephalopelvic disproportion
- The candidate should describe correct application of forceps, traction following curve of Carus and Pajot's manoeuvre to ensure traction along the axis of the pelvic curve
- Maternal complications include failed delivery, lacerations of cervix/vagina, perineal tears, and postpartum haemorrhage
- Fetal complications include bruising, lacerations, nerve palsies, cephalhaematoma, retinal bleed and cerebral/cranial damage
- Forceps delivery should be abandoned if there is no evidence of progressive head descent with each pull or where delivery is not imminent following three pulls despite correct application

Tips for passing this task

Make sure you check with the trainee that they have understood your instructions as you teach them, and allow them to assemble the forceps if you have time at the end of the task.

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3 Simulated patient task

Candidate's instructions

This is a simulated patient task assessing:

- Communication with patients
- Information gathering
- Patient safety
- Applied clinical knowledge

You are an ST5 registrar covering the early pregnancy assessment unit. Rita Evans, a 34-year-old woman, G3P0+2 is your next patient. At the time of her last miscarriage 6 months ago, she had an ERPC procedure where she suffered a uterine perforation and had to have a laparoscopy. No active bleeding or any damage to surrounding organs was noted at the time of laparoscopy. She also developed fever in the postoperative period and was treated with antibiotics for 7 days.

Today her transvaginal ultrasound scan report shows the following:

- Intrauterine gestational sac seen
- Fetal pole seen
- CRL = 10 mm (7 + 2 weeks)
- No fetal heart beat seen
- Both ovaries are normal in appearance

You have 10 minutes in which you should:

- Explain the scan report
- Gather further information
- Outline a specific management plan

Simulated patient's instructions

You are Rita Evans, a 34-year-old barrister. This is your third pregnancy. The previous two have ended in a miscarriage at 8 weeks' gestation (6 months and 1 year ago). You have had two surgical uterine evacuation procedures. At the time of your last miscarriage 6 months ago, you had to have your second ERPC procedure where you unfortunately suffered a uterine perforation (hole in the womb) and then had to have a laparoscopy. No active bleeding or any damage to surrounding organs was noted at the time of the laparoscopy. You also developed fever in the postoperative period and were treated with antibiotics for 7 days. You went home 4 days following the procedure.

You are now 10 weeks pregnant and have had a small amount of vaginal spotting. You have attended the early pregnancy assessment unit for an ultrasound scan which you have had. The sonographer has told you nothing so far.

Your last menstrual period was 10 weeks ago. Your periods before that were regular, every 30 days and lasting for 5 days. You do have period pains. You have had no other gynaecological problems and your cervical smears have always been normal.

You have no other medical problems and you have been trying for a pregnancy since you were married 2 years ago. You do not take any regular medications.

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