MANAGEMENT OF OVARIAN CYSTS
Management of Suspected Ovarian Masses in Premenopausal Women
• In premenopausal women almost all ovarian masses and cysts are benign.

• The overall incidence of a symptomatic ovarian cyst in a premenopausal female being malignant is approximately 1:1000 increasing to 3:1000 at the age of 50.

• Preoperative differentiation between the benign and the malignant ovarian mass in the premenopausal woman can be problematic (exceptions- germ cell tumors with AFP and HCG).
Preoperative assessment of women with ovarian masses

- What is the role of history and examination in the assessment of women with suspected ovarian masses?

- A thorough **medical history** with specific attention to risk factors or protective factors for ovarian malignancy.

- **Family history** of ovarian or breast cancer.

- Symptoms suggestive of endometriosis.

- Along with any symptoms suggesting possible ovarian malignancy: persistent abdominal distension, appetite change including increased satiety, pelvic or abdominal pain, increased urinary urgency and/or frequency.
A careful physical examination

- Abdominal examination
- Vaginal examination
- Presence or absence of local lymphadenopathy.

In the acute presentation with pain the diagnosis of accident to the ovarian cyst should be considered (torsion, rupture, haemorrhage).
What blood tests should be performed?

- A serum CA-125 assay does not need to be undertaken in all premenopausal women when an ultrasonographic diagnosis of a simple ovarian cyst has been made.

- Lactate dehydrogenase (LDH), α-FP and hCG should be measured in all women under age 40 with a complex ovarian mass because of the possibility of germ cell tumours.
What imaging should be employed in the assessment of suspected ovarian masses?

A pelvic ultrasound is the single most effective way of evaluating an ovarian mass with transvaginal ultrasonography being preferable due to its increased sensitivity over transabdominal ultrasound.

The routine use of computed tomography and MRI for assessment of ovarian masses does not improve the sensitivity or specificity obtained by transvaginal ultrasonography in the detection of ovarian malignancy.
**What is the best way to estimate the risk of malignancy?**

- RMI I was the most effective for women with suspected ovarian malignancy.

- RMI I combines three presurgical features: serum CA-125 (CA-125); menopausal status (M); ultrasound score (U).

- RMI = U × M × CA-125.

- The ultrasound result is scored 1 point for each of the following characteristics: multilocular cysts, solid areas, metastases, ascites and bilateral lesions. U = 0 (for an ultrasound score of 0), U = 1 (for an ultrasound score of 1), U = 3 (for an ultrasound score of 2–5).
The menopausal status is scored as 1 = premenopausal and 3 = postmenopausal. Postmenopausal can be defined as women who have had no period for more than one year or women over the age of 50 who have had a hysterectomy.

Serum CA-125 is measured in IU/ml

- RMI I score of 200 in the detection of ovarian malignancies to be: sensitivity 78% (95% CI 71-85%), specificity 87% (95% CI 83-91%)
### IOTA Rules

#### Table 2. IOTA Group ultrasound ‘rules’ to classify masses as benign (B-rules) or malignant (M-rules)\(^{38,51}\)

<table>
<thead>
<tr>
<th>B-rules</th>
<th>M-rules</th>
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<tr>
<td>Unilocular cysts</td>
<td>Irregular solid tumour</td>
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<tr>
<td>Presence of solid components where the largest solid component &lt; 7 mm</td>
<td>Ascites</td>
</tr>
<tr>
<td>Presence of acoustic shadowing</td>
<td>At least four papillary structures</td>
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<tr>
<td>Smooth multilocular tumour with a largest diameter &lt; 100 mm</td>
<td>Irregular multilocular solid tumour with largest diameter ≥ 100 mm</td>
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<tr>
<td>No blood flow</td>
<td>Very strong blood flow</td>
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Management of ovarian masses presumed to be benign in non-emergency situations

- Can asymptomatic women with simple ovarian cysts be managed expectantly?
  - small (less than 50 mm diameter)
    - do not require follow-up
  - simple ovarian cysts of 50–70 mm in diameter
    - yearly ultrasound follow-up
  - larger (>70 mm) simple cysts
    - further imaging (MRI) or surgical intervention.
How should persistent, asymptomatic ovarian cysts be managed?

Ovarian cysts that persist or increase in size are unlikely to be functional and may warrant surgical management with preoperative assessment using RMI 1 or ultrasound rules (IOTA Group).
The Management of Ovarian Cysts in Postmenopausal Women
How are ovarian cysts diagnosed in postmenopausal women and what initial investigations should be performed?

- In postmenopausal women presenting with acute abdominal pain, the diagnosis of an ovarian cyst accident should be considered (e.g. torsion, rupture, haemorrhage). [New 2016]

- It is recommended that ovarian cysts in postmenopausal women should be initially assessed by measuring serum cancer antigen 125 (CA125) level and transvaginal ultrasound scan.
What is the role of history and clinical examination in postmenopausal women with ovarian cysts?

- A thorough medical history with specific attention to risk factors and symptoms suggestive of ovarian malignancy, and a family history of ovarian, bowel or breast cancer.

- Where family history is significant, referral to the Regional Cancer centre should be considered.

- Appropriate tests should be carried out in any postmenopausal woman who has developed symptoms within the last 12 months that suggest irritable bowel syndrome, particularly in women over 50 years of age or those with a significant family history of ovarian, bowel or breast cancer.

- A full physical examination of the woman is essential and should include body mass index, abdominal examination to detect ascites and characterise any palpable mass, and vaginal examination.
What blood tests should be performed in postmenopausal women with ovarian cysts?

- CA125 should be the only serum tumour marker used for primary evaluation as it allows the Risk of Malignancy Index (RMI) of ovarian cysts in postmenopausal women to be calculated.
- CA125 levels should not be used in isolation to determine if a cyst is malignant.

What is the role of ultrasound scanning in categorising cysts?

- A transvaginal pelvic ultrasound is the single most effective way of evaluating ovarian cysts in postmenopausal women.
**Calculation of the RMI**

The RMI is a product of the serum CA125 level (IU/ml); the menopausal status (M); and an ultrasound score (U) as follows:

\[ \text{RMI} = U \times M \times \text{CA125} \]

- The ultrasound result is scored 1 point for each of the following characteristics: multilocular cysts, solid areas, metastases, ascites, and bilateral lesions.
  - \( U = 0 \) (for an ultrasound score of 0)
  - \( U = 1 \) (for an ultrasound score of 1)
  - \( U = 3 \) (for an ultrasound score of 2–5)
- The menopausal status is scored as:
  - 1 = premenopausal
  - 3 = postmenopausal
- This guideline is directed at postmenopausal women and therefore all will be allocated the same score of 3 for menopausal status.
- Serum CA125 is measured in IU/ml and can vary between zero and hundreds or even thousands of units.
Thank you