

# STANDARD OPERATING PROCEDURE

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## Ovarian Cancer

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Special Region (1)

Union of Myanmar

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# Ovarian Cancer

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Ovarian cancer is the sixth commonest cancer affecting women. The number of deaths from

- ovarian cancer is greater than all other gynaecological cancers combined. The life time risk of developing ovarian cancer is approximately 2%. Ovarian cancer usually presents at an advanced stage due to lack of specific signs and symptoms at the early stages. There is no definite ovarian cancer screening for the general population.

## Risk factors

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Increased risk of ovarian cancer in

- Nulliparity
- Endometriosis
- Cigarette smoking
- Obesity
- Family history (BRCA 1, BRCA 2 and Lynch syndrome)
- Ovulation inducing drugs (At least > 6 cycles)

## Clinical Presentation

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- Asymptomatic in early stage
- It can present with abdominal distension, bloating and indigestion, bowel symptoms,

urinary symptoms, early satiety, weight loss, reduced appetite

- Many patients will present in the acute setting with abdominal or pelvic pain, bowel obstruction, pleural effusion, pulmonary emboli and ascites
- Abdominal distension (Ascites) usually present. Inguinal lymph nodes may be present.
- Tumour is usually solid or partly solid, partly cystic, ill-defined margin, irregular surface and rather fixed.

- Vaginal examination is need to differentiate the tumour origin (uterine mass or ovarian

- rigin).
- Per rectal examination is necessary to differentiate it from other mass (retroperitoneal tumour).

## Investigations

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### Tumour Markers

- Serum CA 125
- An elevated level of > 35 U/ml confers a 36 fold increased risk of ovarian cancer.
- Other tumor markers (These should be used under 40 years of age) - B-HCG, AFP, LDH
- A gastric or colonic primary with metastases to the ovaries may mimic ovarian cancer, and

if CEA or CA 19–9 is elevated, this should be considered. A ratio of more than 25:1 (CA125 and CEA) favors an ovarian primary, though it does not completely rule out a primary in the gastrointestinal tract.

### Radiological Investigations

Pelvic ultrasound

- Transvaginal ultrasound is more preferable.
- Solid tumour with a thick capsule and papillary projections are suggestive of ovarian

cancer. Risk of Malignancy Index Formula for calculating RMI score

- $RMI = U \times M \times Ca\ 125$
- Ultrasound scoring (U): solid area, multilocular cyst, bilateral cysts, ascites or distant

metastases

- 0 = no characteristics
- 1 = 1 characteristics
- 3 = 2-5 characteristics
- Menopausal status (M)
- 1 = pre menopausal
- 3 = post menopausal
- CA 125 level

Example of a protocol for triaging women using the RMI

- Low risk cases can be managed by general gynaecologist.
- Moderate and high risk cases should be managed by gynaecological oncologist.

International Ovarian Tumor Analysis (IOTA) IOTA group has developed ultrasound classification system to differentiate benign and malignant

- ovarian lesions.
- CT to detect any abdominal and pelvic metastasis and enlarged pelvic and para-aortic

lymph nodes. CT chest in case of pulmonary metastasis

- MRI, PET CT not routinely used, only used when diagnosis is uncertain with ultrasound.
- A current mammogram should be considered as patients are often in the age group where

breast cancer is prevalent.

- A colonoscopy is indicated when symptoms suggest possible colorectal cancer

## Staging of Malignant ovarian tumours

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FIGO staging classification for cancer of the ovary, fallopian tube, and peritoneum (2021)

Stage I: Tumor confined to ovaries or fallopian tube(s)

IA: Tumor limited to 1 ovary (capsule intact) or fallopian tube; no tumor on ovarian or fallopian tube surface; no malignant cells in the ascites or peritoneal washings

IB: Tumor limited to both ovaries (capsules intact) or fallopian tubes; no tumor on ovarian or fallopian tube surface; no malignant cells in the ascites or peritoneal washings

IC: Tumor limited to 1 or both ovaries or fallopian tubes, with any of the following:

IC 1: Surgical spill

IC 2: Capsule ruptured before surgery or tumor on ovarian or fallopian tube surface

IC 3: Malignant cells in the ascites or peritoneal washings

Stage II: Tumor involves 1 or both ovaries or fallopian tubes with pelvic extension (below pelvic brim) or peritoneal cancer

IIA: Extension and/or implants on uterus and/or fallopian tubes and/or ovaries

IIB: Extension to other pelvic intraperitoneal tissues

Stage III: Tumor involves 1 or both ovaries or fallopian tubes, or peritoneal cancer, with cytologically or histologically confirmed spread to the peritoneum outside the pelvis and/or metastasis to the retroperitoneal lymph nodes

IIIA 1: Positive retroperitoneal lymph nodes only (cytologically or histologically proven):

IIIA 1 (i) Metastasis up to 10 mm in greatest dimension

IIIA 1 (ii) Metastasis more than 10 mm in greatest dimension

IIIA 2: Microscopic extra pelvic (above the pelvic brim) peritoneal involvement with or without positive retroperitoneal lymph nodes

IIIB: Macroscopic peritoneal metastasis beyond the pelvis up to 2 cm in greatest dimension, with

- r without metastasis to the retroperitoneal lymph nodes

IIIC: Macroscopic peritoneal metastasis beyond the pelvis more than 2 cm in greatest dimension, with or without metastasis to the retroperitoneal lymph nodes (includes extension of tumor to capsule of liver and

spleen without parenchymal involvement of either organ) Stage IV: Distant metastasis excluding peritoneal metastases IVA: Pleural effusion with positive cytology IVB: Parenchymal metastases and metastases to extra-abdominal organs (including inguinal lymph nodes and lymph nodes outside of the abdominal cavity)

## HISTOPATHOLOGIC CLASSIFICATION

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The histologic classification of ovarian, fallopian tube, and peritoneal neoplasia is as follows:

- Epithelial tumours
- Serous tumors
- Mucinous tumors
- Endometrioid tumors
- Clear cell tumors
- Brenner tumors
- Undifferentiated carcinomas (this group of malignant tumors is of epithelial structure, but they are too poorly differentiated to be placed in any other group)
- Mixed epithelial tumors (these tumors are composed of two or more of the five major cell types of common epithelial tumors)
- Non – epithelial tumours
- Granulosa cell tumors
- Germ cell tumors
- Sarcomas, and
- Lymphomas

## Metastatic tumours

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## SCREENING

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- To date, there are no effective screening methods that have been shown to reduce the mortality of ovarian, fallopian tube, or peritoneal cancers. Studies using CA125 and/or ultrasonography of the pelvis do not have an acceptable level of sensitivity and specificity.

- Women at increased genetic risk should be encouraged to consider risk-reducing

bilateral salpingo-oophorectomy as this is the most effective way to reduce mortality in this population of women.

- Opportunistic bilateral salpingectomy should be considered in women not at genetic risk who wish to retain their ovaries as a way to reduce their risk of later developing

## TREATMENT OF OVARIAN CANCERS

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### Staging surgery

Women should be referred to tertiary care and treatment discussed at multidisciplinary meetings.

- Cytoreductive Surgery (CRS) is the main stay of treatment if operable.
- Aim of staging laparotomy is to establish the diagnosis, identify any metastatic spread and

remove any visible tumor.

- Extended midline laparotomy
- Careful evaluation of all peritoneal surfaces
- Retrieval of any peritoneal fluid or ascites; if there is none, washings of the

peritoneal cavity should be performed with 100-150 ml of normal saline

- Infra-colic omentectomy
- Selective lymphadenectomy of the pelvic and para-aortic lymph nodes, at least

ipsilateral if the malignancy is unilateral

- Biopsy or resection of any suspicious lesions, masses, or adhesions
- Random peritoneal biopsies of normal surfaces, including from the undersurface of

the right hemidiaphragm, bladder reflection, cul-de-sac, right and left paracolic recesses, and both pelvic sidewalls

- Total abdominal hysterectomy and bilateral salpingo-oophorectomy in most cases
- Interval Cytoreductive Surgery or interval debulking surgery can be considered in

advanced ovarian tumour, after 3-4 cycles of neoadjuvant chemotherapy prior to surgery.

## **Adjuvant postoperative chemotherapy**

- Stage IA and B with grade 1 and 2 does not need chemotherapy.
- Post operative chemotherapy may be required (from Stage IC and above).
- The accepted standard is six cycles of platinum-based combination chemotherapy, with carboplatin and a taxane (paclitaxel or docetaxel)
- If surgical staging is insufficient, the patient may be under staged, chemotherapy would be advised or further staging laparotomy.

## **Management of low malignant potential(borderline) tumors**

- The mainstay of treatment is primary surgical staging and cytoreduction.
- For patients with Stage I disease who want to preserve fertility, conservative surgery via unilateral salpingo-oophorectomy can be considered after intraoperative inspection of the contralateral ovary to exclude involvement.
- For patients with only one ovary, or bilateral cystic ovaries, a partial oophorectomy or cystectomy can be considered for fertility preservation.
- For all other patients, total hysterectomy and bilateral salpingo-oophorectomy are recommended, with maximal cytoreduction if the disease is metastatic.
- Chemotherapy has not been shown to be beneficial in borderline tumors.

## **Management of Granulosa Cell Tumours**

- Granulosa cell tumors are generally indolent (i.e., with a tendency to late recurrence).

Stage at diagnosis is the most important prognostic factor.

- Other prognostic factors include age at diagnosis, tumor size, and histologic features.
- If metastatic, adequate cytoreduction is the mainstay of treatment.
- If the patient is young and the disease is confined to one ovary, conservative surgery should be performed.
- Adjuvant chemotherapy in patients with advanced or recurrent disease, with Carboplatin and paclitaxel showing a similar response rate and less toxicity than BEP

## Management of Germ Cell Tumours

- As chemotherapy can cure the majority of patients, even with advanced disease, conservative surgery is standard in all stages of all germ cell tumors.
- Conservative surgery means laparotomy with careful examination and biopsy of all suspicious areas, with limited cytoreduction, thereby avoiding major morbidity.
- Fertility-sparing surgery is considered the standard of care for young patients with early-stage disease and should also be considered in advanced disease

## Follow-up

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- To detect recurrence and complications of treatment
  - Detect clinical signs and symptoms of recurrence
  - Tumour marker CA 125 is useful to detect recurrence
  - Other investigations as needed
  - Every 3 monthly for one year
  - 4-6 monthly for 2 years, then annually
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## References

1. Obstetrics and Gynaecology Myanmar management Guidelines, 2024
2. Turnbull H and Duncan T (2018). Ovarian, Fallopian tube and primary peritoneal cancer (including Borderline). In: Gynaecological oncology for MRCOG; 1st Ed, Cambridge University Press, UK, 98-111.
3. Berek JS, Kehoe ST, Kumar L, Friedlander M (2018). Cancer of the ovary, fallopian tube and peritoneum. FIGO CANCER REPOR. Int J Gynecol Obster; 143 (2): 59-78.
4. Renz M, Friedlander M, Berek JS (2025) Cancer of the ovary, fallopian tube, and peritoneum: 2025 update. FIGO CANCER REPOR. Int J Gynecol Obster; 171(Suppl. 1):6–35.