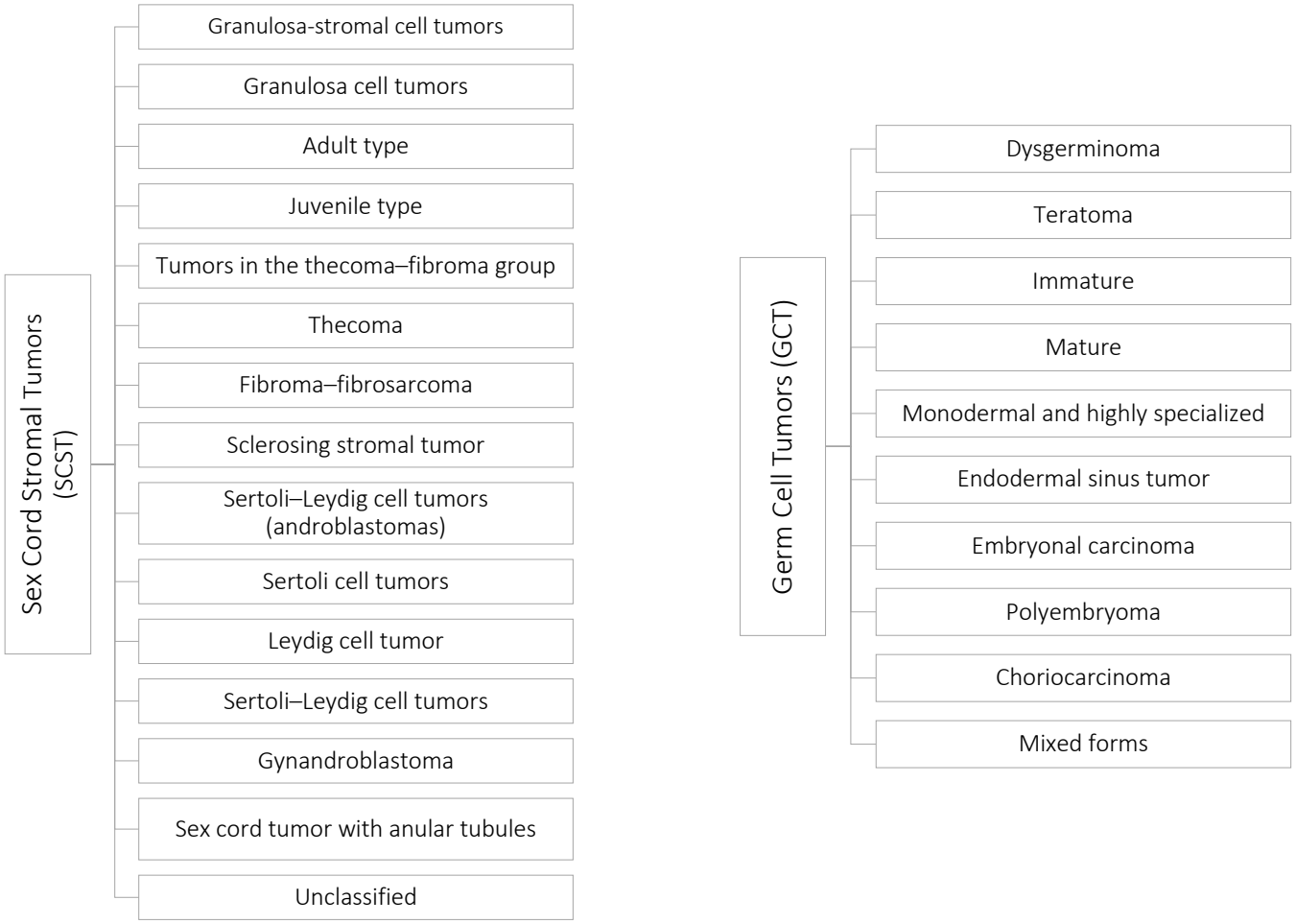
NON-EPITHELIAL OVARIAN CANCER

Initial Workup

- **Clinical:**
  - Performance status
- **Pathology review**
- **Laboratory Investigations:**
  - Complete blood count (CBC)
  - Chemistry profile
  - Human chorionic gonadotropin (β-HCG)
  - Alpha-fetoprotein (AFP)
  - Lactate Dehydrogenase (LDH)
- **Imaging:**
  - Chest X-ray
  - Pelvic ultrasound
  - Abdominopelvic CT scan
  - PET scan (if clinically indicated)
- **Pathology**



Staging and Risk Assessment

- The staging system for non-epithelial ovarian cancers is generally adopted from that used for epithelial ovarian cancer.
- The majority of germ cell tumors (GCTs) (60–70%) are diagnosed at an early stage.
- Stage I patients have an excellent prognosis (long-term disease-free status is 90%).

Surgical Approaches for Non-epithelial Ovarian Cancer

- Surgical Staging:
  - The staging procedure includes infra-colic omentectomy and biopsy of:
    - Diaphragmatic peritoneum,
    - Paracolic gutters,
    - Pelvic peritoneum and
    - Peritoneal washings.
  - Systematic lymphadenectomy is not required. Only in cases of evidence of nodal abnormality, lymph node dissection is required.
  - Surgical staging for endodermal sinus tumor is not indicated because all patients need chemotherapy.

Special Considerations:

1) **Sex cord-stromal tumors (SCSTs):**
   - Conservative surgery seems like an appropriate approach in young patients with SCSTs at stage I disease.
   - Retroperitoneal evaluation is not mandatory for SCSTs because of the very low incidence of retroperitoneal metastases in the early stage.
2) **In patients with granulosa cell tumor:**
   - Endometrial curettage must be performed to rule out concomitant uterine cancers
3) **In postmenopausal women, patients with advanced stage disease or with bilateral ovarian involvement:**
   - Abdominal hysterectomy and
   - Bilateral salpingo-oophorectomy should be performed with careful surgical staging.

Treatment Algorithm

I. Germ Cell Tumors

Stage I – IIA:	
Stage IA immature teratoma grade 1 or Stage I pure dysgerminoma	Surgery only
Stage IA immature teratoma grade 2 and 3 and IB – IC	Still controversial
All patients with stage I endodermal sinus (yolk sac tumor)	Adjuvant chemotherapy in the form of (BEP) for 3 cycles
BEP regimen: Cisplatin 20 mg/m2 D1-5 Etoposide100 mg/m2 D1-5 Bleomycin 30 mg D1, 8, 15	

Stage IIb – IV Germ Cell Tumors:

Debulking surgery

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Adjuvant chemotherapy:

Three cycles of BEP with the completely resected disease or

Four cycles for patients with macroscopic residual disease.

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Post adjuvant chemotherapy

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If a complete remission is achieved:	**If Residual tumor with normal markers:**
Patients will undergo surveillance	• If patients subjected to resection revealed necrotic tissue or mature teratoma; they will be opted for surveillance. • If the residual tumor is present and/or having elevated markers will be candidates for second-line chemotherapy.

Salvage Chemotherapy

VIP (PEI)
Ifosfamide: 1200 mg/m^2 IV infusion over 1 hour on days 1-5 Etoposide (VP-16): 75 mg/m^2 IV infusion over 1 hour on days 1-5 Cisplatin: 20 mg/m^2 IV infusion over 30 minutes on days 1-5 Every 3 weeks FOR 4 cycles with mesna cyto-protection

VeIP
Similar to VIP except giving Vinblastine 0.11 mg /kg iv days 1 and 2 instead of Etoposide.

TIP
Paclitaxel: 250 mg/m2 IV infusion for 24 hours on day 1 Cisplatin: 25 mg/m2 IV infusion over 30 minutes on days 2-5 Ifosfamide: 1500 mg/m2 IV infusion over 1 hour on days 2-5 Every 3 weeks for 4 cycles with mesna and growth factor support

High dose chemotherapy with stem cell support
May play a role in selected relapsed cases.

II. Sex-cord Tumors

- The most common cases are the granulosa variant:
  - There is no standard chemotherapy for these patients.
  - Optimal surgical resection is the most important factor in potentially curing these cases.
- The majority of sex-cord tumors are mostly stage I at the time of diagnosis:
  - Stage I patients have an excellent prognosis (long-term disease-free status is 90%).

Stage I

• Surgery followed by observation.
• Platinum-based chemotherapy is the treatment of choice.
• Adjuvant chemotherapy is not standard but may be used in:
  ○ High-risk disease profile including:
  - Tumor rupture,
  - Stage IC,
  - Poorly differentiated tumor,
  - Size more than 10-15 cm.

Stage II-IV

- Surgery and complete surgical staging.
- Adjuvant treatment:
  - BEP regimen for 3–6 cycles is recommended.

Relapsed Cases

- Clinical trials enrolment.
- Chemotherapy:
  - Taxanes, oxaliplatin, gemcitabine or carboplatin.
- Second cytoreduction.

Follow-up

- The follow-up visit must include:
  - History,
  - Physical examination with pelvic examination and
  - Tumor markers every:
    - 3 months for the first 2 years then
    - 6 months during years 3–5 or until progression is documented.
- Pelvic ultrasound should be performed every 6 months in those patients who underwent fertility-sparing surgery.
- CT scans of the abdomen and pelvis is usually performed yearly.

References

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