EAU Guidelines on Testicular Cancer

Follow up and Rare Tumours

FOLLOW-UP AFTER CURATIVE THERAPY

Based on different risks of relapse depending on diagnosis and initial treatment, three major follow-up groups can be defined:

1. Patients with seminoma stage I on active surveillance or after adjuvant treatment (carboplatin or radiotherapy)

Modality	Year 1	Year 2	Year 3	Years 4 & 5	After 5 years
Tumour markers ± doctor visit	2 times	2 times	2 times	Once	Further management according to survivorship care plan
Chest X-ray	-	-	-	-	
Abdominopelvic magnetic resonance imaging (MRI)/ computed tomography (CT)	2 times	2 times	Once at 36 months	Once at 60 months	

2. Patients with non-seminoma stage I on active surveillance

Modality	Year 1	Year 2	Year 3	Year 4 & 5	After 5 years
Tumour markers ± doctor visit	4 times*	4 times	2 times	1-2 times	Further management according to survivorship care plan
Chest X-ray	2 times	2 times	Once, in case of LVI+	At 60 months if LVI+	
Abdominopelvic magnetic resonance imaging (MRI)/ computed tomography (CT)	2 times	At 24 months**	Once at 36 months***	Once at 60 months***	

* In case of high-risk (LVI+) a minority of the consensus group members recommended six times.
** In case of high-risk (LVI+) a majority of the consensus group members recommended an additional CT at eighteen months.
*** Recommended by 50% of the consensus group members.
LVI+ = Lymphovascular invasion present

3. Patients having received either adjuvant treatment or curative chemotherapy for "good"- and intermediate-prognosis metastatic disease achieving a complete remission with, or without, surgery (for seminoma this includes residual lesions < 3 cm, or residual lesions > 3 cm that are FDG-PET-negative).

Modality	Year 1	Year 2	Year 3	Year 4 & 5	After 5 years
Tumour markers ± doctor visit	4 times	4 times	2 times	2 times	Further management according to survivorship care plan**
Chest X-ray	1-2 times	Once	Once	Once	
Abdominopelvic magnetic resonance imaging (MRI)/ computed tomography (CT)	1-2 times	At 24 months	Once at 36 months	Once at 60 months	
Thorax CT	1-2 times*	At 24 months*	Once at 60 months*	Once at 60 months*	

* In conjunction with abdominopelvic MRI/CT in case of pulmonary metastases at diagnosis.
** In case of teratoma in resected residual disease: the patient should remain with the uro-oncologist

- Patients not achieving a complete remission or presenting with poor-prognosis disease should be followed up individually by specialised centres.
- Both MRI and CT can be used to evaluate the retroperitoneum, pelvis and inguinal regions for sites of metastatic disease from Germ Cell Tumors (GCT). Studies have shown comparable results with up to 98% sensitivity on MRI for the detection of retroperitoneal nodal metastases.
- FDG-PET-CT is only recommended for seminoma patients with post-chemotherapy residual masses > 3 cm in largest diameter.
- Regarding the use of ultrasound (US) examination of the contralateral testis, the majority of the consensus did not support repeat US investigation, either with negative biopsy or if no contralateral biopsy has been performed.

RARE ADULT PARA- AND TESTICULAR TUMOURS

Less than 5% of testicular cancers are unrelated to germ cell neoplasia "in situ" (GCNIS) and lack 12p alterations.
These testicular tumours have a similar presentation as testicular cancer (TC) and are only identified after histopathologic examination.

1. Spermatocytic Tumours:

They are rare and occur exclusively in the testis and do not normally show elevated tumour markers. As those tumours cannot be differentiated from seminoma by frozen section analysis, radical orchidectomy is the standard treatment option. Outcomes after testis-sparing surgery or adjuvant treatment is unknown and therefore not recommended. Metastatic disease is very rare, usually associated with 'sarcomatoid change'.

2. Sex cord-stromal tumours:

They are relatively uncommon but represent the second largest group of primary testicular tumours after GCT's. Two or more of the following features are associated with malignant potential: size > 5 cm, infiltrative borders, cytological atypia, three or more mitotic figures per ten high-power fields, vascular invasion and necrosis.

A. **Leydig cell tumours: 4% of adult testicular tumours. These mainly present as localised tumours with metastases occurring in only 2.5%. They may present with hormonal manifestations, including gynaecomastia and more rarely are accompanied by Cushing's Syndrome.**
B. **Sertoli cell tumours: 1% of testicular neoplasms. Survival of men with metastatic disease is poor although response to surgery has been occasionally reported.**
C. **Granulosa cell tumour: Include adult and juvenile variants. Are extremely rare and metastatic potential is unclear. Survival of men with metastatic disease is poor.**
D. **Thecoma/fibroma group of tumours: These tumours derive from the testicular parenchymal stroma or from the tunica albuginea. They seem to be uniformly benign.**
E. **Paratesticular tumours of the epididymis or spermatic cord: The majority are benign cystic or inflammatory conditions. Solid epididymal tumours are rare and comprise numerous benign (lipomas, adenomatoid tumours…) and neoplastic lesions (sarcomas, metastases from other organs or primary adenocarcinomas). No clear recommendation can be provided regarding surgical approach, extent of resection and neo- or adjuvant treatment can be given.**

3. Mesothelioma of the tunica vaginalis testis:

Is a rare but aggressive disease. Aggressive local treatment with hemiscrotectomy is recommended. No clear recommendation can be given regarding adjuvant treatment. In case of metastatic disease, the median overall survival is a few months only and multimodal treatment could be considered.