Testis Tümörü Olgu Sunumları

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İzmir
Olgu 1
The overall cancer-specific survival rate reported under surveillance performed by experienced centres is 97-100% for seminoma stage I (104,106). The main drawback of surveillance is the need for more intensive follow-up, especially with repeated imaging examinations of the retroperitoneal lymph nodes, for at least 5 years after orchidectomy. This compares with the very low risk of subdiaphragmatic relapse after adjuvant radiotherapy.
# NCCN Guidelines Version 1.2014

## Testicular Cancer - Pure Seminoma

### CLINICAL STAGE

<table>
<thead>
<tr>
<th>Stage IA, IB</th>
<th>Surveillance for pT1-pT3 tumors (category 1) (preferred)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single-agent carboplatin (category 1) (AUC=7 x 1 cycle or AUC=7 x 2 cycles)</td>
</tr>
<tr>
<td></td>
<td>Rotation (category 1)</td>
</tr>
</tbody>
</table>

| Stage IS | Repeat elevated serum tumor marker and assess with abdominal/pelvic CT scan for evaluable disease |

### PRIMARY TREATMENT

- Surveillance for pT1-pT3 tumors (category 1) (preferred)
- Single-agent carboplatin (category 1) (AUC=7 x 1 cycle or AUC=7 x 2 cycles)

### FOLLOW-UP

- **H&P, AFP, beta-hCG, LDH:**
  - every 3-4 mo for years 1-2,
  - every 6-12 mo for years 3-4, then annually
- **Abdominal/pelvic CT every 6 mo for years 1-2, every 6-12 mo for year 3, then annually for years 4-5, chest x-ray as clinically indicated for years 1-5**

### Recurrence

- Treat according to extent of disease at relapse
- Discuss sperm banking

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### Notes

- See Principles of Radiotherapy for Pure Testicular Seminoma (TEST-A).
- For Stage I seminoma, long term follow-up studies indicate an increase in late toxicities with radiation treatment, see Discussion.
- For further information on Stage IS, see Discussion.

**Note:** All recommendations are category 2A unless otherwise indicated.

Clinical Trials: NCCN believes that the best management of any cancer patient is in a clinical trial. Participation in clinical trials is especially encouraged.
FOLLOW-UP FOR SEMINOMA

The follow-up for seminoma tables are to provide guidance, and should be modified for the individual patient based upon sites of disease, biology of disease, and length of time on treatment. Reassessment of disease activity should be performed in patients with new or worsening signs or symptoms of disease, regardless of the time interval from previous studies.

### Table 1  Clinical Stage I Seminoma: Surveillance after Orchiectomy

<table>
<thead>
<tr>
<th>Year (at month intervals)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H&amp;P</strong>&lt;sup&gt;1,2&lt;/sup&gt;</td>
<td>Every 3–6 mo</td>
<td>Every 6–12 mo</td>
<td>Every 6–12 mo</td>
<td>Annually</td>
<td>Annually</td>
</tr>
<tr>
<td><strong>Abdominal/ Pelvic CT</strong></td>
<td>At 3, 6, and 12 mo</td>
<td>Every 6–12 mo</td>
<td>Every 6–12 mo</td>
<td>Every 12–24 mo</td>
<td></td>
</tr>
<tr>
<td>Chest x-ray</td>
<td>As clinically indicated, consider chest CT in symptomatic patients.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If Recurrence, treat according to extent of disease at relapse

### Table 2  Clinical Stage I Seminoma: Surveillance after Adjuvant Treatment (Chemotherapy or Radiation)

<table>
<thead>
<tr>
<th>Year (at month intervals)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H&amp;P</strong>&lt;sup&gt;1,2&lt;/sup&gt;</td>
<td>Every 6–12 mo</td>
<td>Every 6–12 mo</td>
<td>Annually</td>
<td>Annually</td>
<td>Annually</td>
</tr>
<tr>
<td><strong>Abdominal/ Pelvic CT</strong></td>
<td>Annually</td>
<td>Annually</td>
<td>Annually</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chest x-ray</td>
<td>As clinically indicated, consider chest CT in symptomatic patients.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If Recurrence, treat according to extent of disease at relapse

Serum tumor markers are optional.

<sup>1</sup>Testicular ultrasound for any equivocal exam.

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<table>
<thead>
<tr>
<th>Procedure</th>
<th>Year</th>
<th>1</th>
<th>2</th>
<th>3-4</th>
<th>5-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical examination</td>
<td></td>
<td>3 times</td>
<td>3 times</td>
<td>Once/year</td>
<td>Once/year</td>
</tr>
<tr>
<td>Tumour markers</td>
<td></td>
<td>3 times</td>
<td>3 times</td>
<td>Once/year</td>
<td>Once/year</td>
</tr>
<tr>
<td>Plain radiography chest</td>
<td></td>
<td>Twice</td>
<td>Twice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abdominopelvic CT</td>
<td></td>
<td>Twice</td>
<td>Twice</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*CT = computed tomography.*
<table>
<thead>
<tr>
<th>Diagnostic Procedure</th>
<th>Typical Effective Dose (mSv)</th>
<th>Number of Chest X-rays (PA film) for Equivalent Effective Dose¹</th>
<th>Time Period for Equivalent Effective Dose from Natural Background Radiation²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chest x-ray (PA film)</td>
<td>0.02</td>
<td>1</td>
<td>2.4 days</td>
</tr>
<tr>
<td>Skull x-ray</td>
<td>0.07</td>
<td>4</td>
<td>8.5 days</td>
</tr>
<tr>
<td>Lumbar spine</td>
<td>1.3</td>
<td>65</td>
<td>158 days</td>
</tr>
<tr>
<td>Upper G.I. exam</td>
<td>3.0</td>
<td>150</td>
<td>1.0 year</td>
</tr>
<tr>
<td>Barium enema</td>
<td>7.0</td>
<td>350</td>
<td>2.3 years</td>
</tr>
<tr>
<td>CT head</td>
<td>2.0</td>
<td>100</td>
<td>243 days</td>
</tr>
<tr>
<td>CT abdomen</td>
<td>10.0</td>
<td>500</td>
<td>3.3 years</td>
</tr>
</tbody>
</table>

Table 2: Effective dose comparisons. Source: American Food and Drug Administration.
A 2005 report by the National Research Council (8) updates 1990 findings of risks from exposure to low levels of radiation, which are mainly based on Japanese survivors of the 1945 atomic bomb attacks. The report found that a dose of about 100 mSv can be expected to cause cancer in one out of every 100 people, or in one out of 1000 people from 10 mSv of effective radiation dose. This is in comparison to the estimation of one individual in 100 who would be expected to develop cancer from a lifetime (70 years) exposure to natural background radiation. The report also notes that approximately 42 additional people in the same group would be expected to develop solid cancer or leukemia from other non-radiation causes with about half of the cancers resulting in death.
The International Commission on Radiological Protection (ICRP) Publication 60 states that the estimated cancer mortality risk is 5% per Sv, and the risk of nonfatal cancer is 1% per Sv for the general population. This corresponds to 6 out of 1000 people who are estimated to develop cancer (fatal and nonfatal) from 100 mSv of effective radiation dose.
High doses of radiation lead to an increased risk of developing cancer and may cause genetic effects in the children of irradiated individuals. While there is much less data on the risk at the lower dose levels associated with diagnostic radiology, the main international advisory bodies support the theory that risks exist with even low levels of radiation doses.
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Testicular Cancer - Pure Seminoma

**CLINICAL STAGE**

**PRIMARY TREATMENT**

- Surveillance for pT1-pT3 tumors (category 1) (preferred)
  - or
  - Single-agent carboplatin (category 1) (AUC=7 x 1 cycle or AUC=7 x 2 cycles)
  - or
  - RT* (category 1)*

**FOLLOW-UP**

- H&P, AFP, beta-hCG, LDH:
  - every 3-4 mo for years 1-2,
  - every 6-12 mo for years 3-4, then annually
- Abdominal/pelvic CT every 6 mo for years 1-2, every 6-12 mo for year 3, then annually for years 4-5;
  - chest x-ray as clinically indicated for years 1-5

  - Recurrence, treat according to extent of disease at relapse
  - Discuss sperm banking

- H&P, AFP, beta-hCG, LDH:
  - every 3 mo for year 1,
  - every 4 mo for year 2,
  - every 6 mo for year 3, then annually
- Abdominal/pelvic CT annually for years 1-3;
  - chest x-ray as clinically indicated

  - Recurrence, treat according to extent of disease at relapse

- H&P + AFP, beta-hCG, LDH:
  - every 4 mo for years 1-2, then annually for years 3-10
- Abdominal/pelvic CT annually for 3 years (for patient status post only para-aortic RT);
  - chest x-ray as clinically indicated

  - Recurrence, treat according to extent of disease at relapse

- Repeat elevated serum tumor marker and assess with abdominal/pelvic CT scan for evaluable disease

  - Recurrence, treat according to extent of disease at relapse

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*See Principles of Radiotherapy for Pure Testicular Seminoma (TEST-A).

*For Stage I seminoma, long term follow-up studies indicate an increase in late toxicities with radiation treatment, see Discussion.

*For further information on Stage IS, see Discussion.

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<tr>
<td>Surveillance for pT1-pT3 tumors (category 1) (preferred)</td>
<td>See Follow-up for Seminoma, Table 1 (TEST-A 1 of 2)</td>
</tr>
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- Recurrence, treat according to extent of disease at relapse
- Discuss sperm banking

or

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<tbody>
<tr>
<td>Single-agent carboplatin (AUC=7 x 1 cycle or AUC=7 x 2 cycles)</td>
<td>See Follow-up for Seminoma, Table 2 (TEST-A 1 of 2)</td>
</tr>
</tbody>
</table>

- Recurrence, treat according to extent of disease at relapse

or

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<tr>
<th>PRIMARY TREATMENT</th>
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<tr>
<td>RT (20 Gy)</td>
<td>See Follow-up for Seminoma, Table 2 (TEST-A 1 of 2)</td>
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- Recurrence, treat according to extent of disease at relapse

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<tr>
<td>Stage IS</td>
<td>Repeat elevated serum tumor marker and assess with abdominal/pelvic CT scan for evaluable disease</td>
</tr>
<tr>
<td>Management Option</td>
<td>GR</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
<td>----</td>
</tr>
<tr>
<td>Surveillance is the recommended management option (if facilities available and patient compliant)</td>
<td>A*</td>
</tr>
<tr>
<td>Carboplatin-based chemotherapy (one course at AUC 7) is recommended.</td>
<td>B</td>
</tr>
<tr>
<td>Adjuvant treatment is not recommended for patients at very low risk.</td>
<td>A</td>
</tr>
<tr>
<td>Radiotherapy is not recommended as adjuvant treatment.</td>
<td>A</td>
</tr>
</tbody>
</table>

*Upgraded following panel consensus.
6.1 Stage I seminoma
After modern staging procedures, about 15-20% of stage I seminoma patients have subclinical metastatic disease, usually in the retroperitoneum, and will relapse after orchidectomy alone.

6.1.1 Surveillance
Several prospective non-randomised surveillance studies have been conducted during the past decade, the largest study from Canada with > 1,500 patients (103). Previous analysis from four studies showed an actuarial 5 years' relapse-free rate of 82.3%. The Princess Margaret Hospital series (n = 1559) showed an overall relapse

In patients with low risk (tumour size ≤ 4 cm and no rete testis invasion) the recurrence under surveillance is as low as 6% (105).
6.1.5 Risk-adapted treatment

Using tumour size > 4 cm and rete testis invasion, patients with seminoma stage I may be subdivided into a low- and high-risk group of occult metastatic disease. Patients with and without both risk factors have a risk of occult disease of 32% and 12%, respectively. These risk factors were introduced by an analysis of retrospective trials (29). A prospective trial based on these risk factors (no risk factors: surveillance; both risk factors: two courses of carboplatin AUC 7) showed the feasibility of a risk-adapted approach. Early data with limited follow-up indicate that patients without either risk factor have a 6.0% risk of relapse at 5 years. Patients in the high risk group treated with carboplatin experienced a 1.4% relapse rate at mean follow-up of 34 months (122).

• Evre I seminom
• N=687, retrospektif
• Aktif izlem
• Ortalama takip 3.85 yıl
• 5 yıllık relapsız sağ kalım %85
• Multivariat analiz
  – Tümör boyutu (4cm vs > 4cm), HR 1.36, (95% CI 0.80, 2.36)
  – Rete testis invazyonu, HR 1.16, (95% CI 0.69, 1.96)
  – Relapsı belirlemede istatiksel olarak anlamsız

The overall cancer-specific survival rate reported under surveillance performed by experienced centres is 97-100% for seminoma stage I (104,106). The main drawback of surveillance is the need for more intensive follow-up, especially with repeated imaging examinations of the retroperitoneal lymph nodes, for at least 5 years after orchidectomy. This compares with the very low risk of subdiaphragmatic relapse after adjuvant radiotherapy.

However, given the fact that cure is achieved in ~100% in patients with stage I seminoma whatever therapy used (adjuvant radiotherapy, adjuvant chemotherapy, or surveillance) and that the relapse rate in large surveillance series not using risk factors is ~15-20%, indicates a risk of over-treatment.
Olgu 2
Bilateral Testis Tümörleri

- İnsidans %1-4
- %50 oranında inmemiş testis öyküsü +
- Eş zamanlı (senkron) %15
- Ardışık (metakron) %85
  - 50-75 ay
- Histolojik tip
  - Seminom (%48)
  - Nonseminom (%15)
  - Nongerminal (%22)
  - Lenfoma
- %85 aynı histolojik tip
• İkincil tümörler
  – histopatolojik açıdan daha düşük risk
  – proliferasyon oranları düşük
  – vasküler invazyon oranları düşük
  – metastaz oranı çok nadir
  – prognozunun daha iyi
• Testiküler germ hücreli tümörlerin öncül lezyonu
  – Testiküler intraepitelyyal neoplazi (TIN) =
  – Karsinoma insitu testis (CIS) =
  – İntratubuler germ hücreli neoplazi (IGCNU)
• + ise 5 yıl içinde invaziv testis kanseri riski %50
• Radikal orşiektomi+kontralateral testis biopsisi yapılan hastaların %4.9’unda (%4 ile %13.5) karşı taraf testiste TIN saptanmıştır
  – Kontralateral testis biopsi +/-?
• Testis Koruyucu Cerrahi (TKC) Endikasyonları
  – Eş zamanlı bilateral testis tümörü
  – Ardışık karşı testis tümörü
  – Soliter testis tümörü
  – Karşı testisin normal olduğu durumlarda endikasyon yok

• Çok özel durumlarda gerekli önlemler alınarak teşebbüs edilebilir
– Eğer preoperatif testosteron seviyeleri normal ise
– Eğer tümör hacmi testis hacminin %30'undan veya 2cm.den az ise
– Eğer tümör tabanından alınan biyopsiler negatif ise
– Eğer kalan testis parankiminde TIN mevcut değil ise?
• Avantajları
  – Fizyolojik androjen üretimi
  – Vücut görüntüsünün iyi olması
  – Fertilitenin devam etmesi
• Dezavantajları
  – Rekürrens riski
  – %82 TIN beraberliği +
    • Adjuvan radyoterapi (20Gy) gereksinimi +
      – İnfertilite
      – Leydig hücre disfonksiyonu
• Hastayı detaylı bilgilendirme
• Deneyimli merkez
• Testis Koruyucu Cerrahi vs Radikal Orşiektomi
  – Randomize kontrollü çalışma yok
  – Retrospektif çalışmalar
  – Orta ve uzun dönem takiplerde fark yok
    • Lokal rekürrens
    • Uzak rekürrens
Teknik

• İnguinal yaklaşıım
• Vasküler klemp
• Soğuk iskemi
• Tümör ekimi !!!
• Tümör yatağından biopsi (cerrahi sınır)
  – 3mm normal parankim
• Komşu normal parankimden biopsi (TIN)
TEŞEKKÜRLER