

TESTICULAR CANCER

Staging systems for testicular cancer:

Walter Reed System	TNM system	Description
A (I)	N0	Disease confined to the testis
B (II)	N1, N2a	Five positive lymph nodes or less without extension into retroperitoneal fat; no node > 2 cm
	N2b	Six or more positive lymph nodes, well encapsulated and /or retroperitoneal fat extension; any node > 2 cm
	N3	Bulky abdominal disease or palpable mass
C (III)	M+	Disseminated disease (lung, liver, bone or supradiaphragmatic spread)

Chemotherapy Protocols

EP

Etoposide 100 mg/m² IV daily for 5 days.

Cisplatin 20 mg/m² IV daily for 5 days.

Hydration: see Cisplatin I.V hydration protocol.

Antiemetics : see antiemetic protocol (page 16).

Mucositis Prevention see (page 18).

GCSF support.

(Repeat cycles every 21 days)

BEP

Etoposide 100 mg/m² IV daily for 5 days.

Cisplatin 20 mg/m² IV daily for 5 days.

Bleomycin 30 U IV weekly on days 1, 8, 15,

Premedication : Hydrocortisone 100 mg prior to Bleomycin.

Hydration: see Cisplatin I.V hydration protocol.

Antiemetics : see antiemetic protocol (page 16).

Mucositis Prevention see (page 18).

GCSF support.

(Repeat cycles every 21 days).

VIP

Ifosfamide 1.2 gm/m² IV daily for 5 days, add Mesna 1.2 gm/m² to the same bag daily for 5 days

Cisplatin 20 mg/m² IV daily for 5 days

Vinblastin 0.11 mg/kg body weight IV on Days 1 and 2. Or Etoposide, 75mg/m² IV daily for 5 days.

Hydration: : See Cisplatin and Ifosfamide IV Hydration.

Antiemetics : see antiemetic protocol (page 16).

Mucositis Prevention see (page 18).

GCSF support.

(Repeat cycles every 21 days)

Prognostic Classification:

International germ cell collaborative group consensus conference criteria for good- and poor-risk testicular cancer patients treated with chemotherapy.

I. Nonseminoma

? Good prognosis:

All of the following:

- AFP < 1,000 ng/mL, HCG < 5,000 IU, and LDH < 1.5 x upper limit of normal
- Nonmediastinal primary site
- No nonpulmonary visceral metastasis

? Intermediate prognosis

All of the following:

- AFP = 1,000-10,000 ng/mL, HCG = 5,000-50,000 IU/L, or LDH = 1.5-10 x normal
- Nonmediastinal primary site
- No nonpulmonary visceral metastasis

? Poor prognosis

Any of the following

- AFP > 10,000 ng/mL, HCG > 50,000 IU/L, or LDH > 10 x normal
- Mediastinal primary site
- Nonpulmonary visceral metastasis present

II. Seminoma

? Good prognosis

- No nonpulmonary visceral metastasis

? Intermediate prognosis

- Nonpulmonary visceral metastasis present

Treatment :

- ? Consider sperm banking prior to any intervention
- ? When seminoma and nonseminoma are both present, management follows that for nonseminoma
- ? Radical inguinal orchiectomy should be done for all stages and may be delayed in advanced stage till after chemotherapy

I. Nonseminoma

1) Stage I:

Testicular tumor with no vascular/ lymphatic invasion.

- a) Surveillance (children, patient choice, compliance. And if the treating urologist is not familiar with nerve-sparing techniques).

Chest x-ray, tumor markers, and physical examination every month for one year, every 2 months for the second year, and every 3 to 6 months thereafter. Abdominal/pelvic CT scan every 3 months for 2 year, every 6 months for 1 year, then yearly for 2 years; surveillance is necessary for a minimum of 5 years and possibly 10 years.

OR

- b) Nerve-sparing retroperitoneal lymph node dissection.

2) Stage I:

Testicular tumor with vascular/ lymphatic invasion, extension through tunica albuginea with involvement of tunica vaginalis, spermatic cord invasion, scrotum invasion.

- Nerve-sparing retroperitoneal lymph node dissection, chemotherapy is not recommended in United States

3) Stage I:

Persistent elevation of markers, but no radiographic evidence of disease.

- 3 cycles of BEP or 4 cycles of EP without retroperitoneal lymph node dissection

4) Stage II:
N1, N2a, N2b

Primary Surgery: retroperitoneal lymphadenectomy (RLND), then:

a) N1

? Observation.

OR

? 2 cycles of EP or BEP; 3 cycles of BEP for elevated serum markers after surgery, or incomplete lymph node dissection.

b) N2

? 2 cycles of EP or BEP; 3 cycles of BEP for elevated serum markers after surgery, or incomplete lymph node dissection.

Primary chemotherapy:

N2b > 3 cm, Extragonadal primary site (retroperitoneal or Mediastinal).

? 3 cycles of BEP or 4 cycles of EP.

? Consider RPLND, and resection of residual masses

5) Stage III:

1) Good risk Nonseminoma:

? 3 cycles of BEP

OR

? 4 cycles of EP

- If a patient has persistent radiographic disease with normal serum markers 4-6 weeks following chemotherapy, surgical resection should be performed when possible, if persistent carcinoma is

detected, 2 additional cycles of EP should be administered

2) Intermediate and poor risk Nonseminoma:

? 4 cycles of BEP

OR

? 2 cycles of BEP followed by high-dose chemotherapy with autologous bone marrow transplantation.

- If a patient has persistent radiographic disease with normal serum markers 4-6 weeks following chemotherapy, surgical resection should be performed when possible, if persistent carcinoma is detected, 2 additional cycles of EP should be administered.
- Life-threatening Metastatic disease, chemotherapy is initiated prior to orchiectomy.
- Brain metastasis, should be treated with chemotherapy and simultaneous whole brain irradiation (5,000 cGy/25 fractions).

II. Seminoma

1) Stage I :

? Radiation (American school)

OR

? Surveillance (European school), not recommended in the United States

OR

? Carboplatin 1-2 cycles.

2) Stage II :

Lymphadenopathy < 5 cm

? Radiation

Lymphadenopathy > 5 cm

? 3 cycles of BEP or 4 cycles of EP, same for relapse after radiation.

3) Stage III

a) Good risk and Extragonadal seminoma (such as Mediastinal):

- 3 cycles of BEP or 4 cycles of EP, then observation for residual masses.

b) Intermediate risk

- 4 cycles of BEP.

Salvage chemotherapy:

? VIP x 4 cycles (testicular primary, prior complete response, low-volume disease).

? High dose chemotherapy with autologous bone marrow transplantation (high risk patients).

References

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