**MANAGEMENT OF TESTICULAR TUMORS**

**Patient with testicular mass/lower abdominal mass with missing testis**

**Clinical examination**
(Suspicion of tumor)-Undescended testis

**Tumor Markers (A)**
- AFP, BhCG, LDH (A)
- USG - Scrotum (A)
- CT scan (Thorax, Abdo, Pelvis) (A)
- Semen analysis (B)
- Sperm banking (B)

**High Inguinal Orchidectomy (A)**
(Scrotal Orchidectomy should not be done)

**HPR, Post Orchidectomy tumor marker (A)**

**Staging and risk stratification (A)**

- USG Testis (A)
- Ejaculated sperm preservation if family not completed (B)
- Risk Stratification (A)
- CT (T+A+P) (A)
- Repeat Tumour Markers after High Inguinal Orchidectomy at least after 7-10 days (A)

- USG guided FNAC (C)
- Onco TESE if ejaculated sperm cryopreservation not feasible (C)
- Brain Imaging if case of symptoms and patients with metastatic disease with multiple lung metastases or high b-hCG values (B)
- Fertility investigations: Total testosterone; Luteinising hormone; Follicle-stimulating hormone (C)
STAGE – I SEMINOMA

Seminoma Stage I Disease

High Inguinal Orchidectomy (A)

Risk Stratification (B)
- Size > 4cm
- Stromal invasion of the rete testis

Single Agent Carboplatin AUC 7 x 1 cycle (A)
Dose of Carboplatin as per GFR calculated as per DTPA
Or as per 24 hr Urinary Creatinine (A)
Or
- Prophylactic RT to paraaortic nodes (A)
Or
2 cycle of Carboplatin AUC 7 (B)
Or
Close Surveillance (Imaging And Tumor Markers) (B)
STAGE – II /III SEMINOMA

Seminoma Stage II Disease

Stage IIa/ IIb Disease

- either RT (A)
- or Chemotherapy (B)

Follow Up/Observe

Residual Mass >3cm on CT scan

- PET CT after 10 -12 weeks of last chemotherapy (A)

PET CT negative

- follow up (A)

PET CT positive

- surgery if feasible / radiation in few cases (A)

Residual disease present

- RT (B)

Residual disease absent

- follow up/observe (A)

Stage IIc / III Disease

- 3 cycles BEP or 4 cycles EP (A)

Repeat Tumor Markers And Imaging (A)

No Residual Mass or Mass <3cm And Normal Tumor Markers

- follow up/observe (A)

PET CT negative

- follow up (A)

PET CT positive

- surgery if feasible / radiation in few cases (A)

Residual disease present

- RT (B)

Residual disease absent

- follow up/observe (A)

- For Stage II A: RT (A)
- For Stage II B: Chemotherapy (A)
- FDG PET CT for Post chemo seminoma if residual lesion >3cm (A)
- For PET positive residual masses , consider surgery if feasible preferably at high volume centre (A)
- For Stage II A: Chemotherapy (B)
- For Stage II B: RT (B)
- RT to PET positive residual disease if inoperable (C)
**STAGE I NSGCT**

NSGCT stage I disease with normalised tumour markers

High Inguinal Orchidectomy (A)

Risk Adapted Approach: as per Histopathological features *(A)*

Low Risk
- Surveillance (C)
- 1# BEP (B)

High Risk
- NS – RPLND and further treatment as per HPR (C)
- 1# BEP(A)
- NS – RPLND (C)

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*High risk for stage I includes: Lymphovascular invasion (LVI) + or Embryonal carcinoma component > 40%*
STAGE II and III NSGCT

Risk stratification as per IGCCC (A)

Good risk

3# BEP/4 #EP (A)
Residual Mass on Imaging CECT T+A+P (A) with normalization of tumour markers
RPLND or resection of residual disease

Intermediate /Poor risk

4# BEP (A) or 4# VIP (C)
Residual Mass on Imaging CECT T+A+P (A) with normalization of tumor markers
Observation Vs 2 # cycles of Chemotherapy as per Histo pathology report in RPLND (A)

Tumour markers Normal

CECT Thorax + Abdomen +Pelvis: Normal
Observation and follow up (A)

A: Essential
B: Optimal
C: Optional
Relapsed NSGCT and seminoma (First line)

Early relapse (Within 2 year)
- TIP / VeIP (A)
- Auto BMT (B)

Late relapse (After 2 year)
- If surgical resection is feasible than Surgery
- Further chemotherapy as per Histopathology report (A)

Residual Mass with normalization of tumour markers
- RPLND or resection of residual disease (A)

A: Essential
B: Optimal
C: Optional
Relapse NSGCT and Seminoma (Second relapse)

Gemcitabine and Oxaliplatin / Gemcitabine and Paclitaxel / TIP (if not used previously) (B)

Or Auto BMT (B)

A: Essential
B: Optimal
C: Optional
SUGGESTED REFERENCES:


2. Spermon JR, De Geus-Oei LF, The role of (18)fluoro-2-deoxyglucose positron emission tomography in initial staging and re-staging after chemotherapy for testicular germ cell tumours. BJU Int. 2002 Apr;89(6):549-56.


