Prognostic factors in testicular cancer

Murali Varma
Cardiff, UK
wptmv@cf.ac.uk

Prognostic factors in GCT
Stage I disease

- Pathology critical
- Seminoma (S)
  - Size >4cm
  - Rete testis involvement (invasive more significant)
- Non-seminoma (NS)
  - Vascular invasion
  - % of embryonal carcinoma >50%
  - Proliferation index >70%
  - S + NS managed as NS

Prognostic factors in GCT
Stage II and above

- Pathology is less important
  - Only seminoma vs. non-seminoma is used to determine prognostic groupings
  - Predominant seminoma with focal non-seminoma is managed as non-seminoma

Metastatic GCT
Prognostic groupings

<table>
<thead>
<tr>
<th>Prognostic Group</th>
<th>Tumour type</th>
<th>5 Year Progression Free Survival (%)</th>
<th>5 Year Survival (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>Seminoma (90%)</td>
<td>82</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>Non-seminoma (56%)</td>
<td>89</td>
<td>92</td>
</tr>
<tr>
<td>Intermediate</td>
<td>Seminoma (10%)</td>
<td>67</td>
<td>72</td>
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<tr>
<td></td>
<td>Non-seminoma (28%)</td>
<td>75</td>
<td>80</td>
</tr>
<tr>
<td>Poor</td>
<td>Seminoma (None)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Non-seminoma (16%)</td>
<td>41</td>
<td>48</td>
</tr>
</tbody>
</table>

Stage II and above
(Seminoma)

- Only site of metastasis is important
  - Non-pulmonary visceral metastasis (eg. liver):
    - Absent: good prognostic group
    - Present: intermediate prognostic group
  - Seminoma with metastasis in lymph nodes and lung is in good prognostic group
  - Seminoma never in poor prognostic group

Stage II and above
(Non-seminoma)

- Prognostic grouping is based on
  - Site of primary tumour
  - Site of metastasis
  - Serum marker levels
  - Mediastinal primary or non-pulmonary visceral metastasis, or very high serum markers: poor prognosis group
  - Otherwise good/intermediate based on serum marker levels
pT staging of GCT

- **pTX**: Primary tumour cannot be evaluated (no orchidectomy)
- **pT0**: No evidence of primary tumour in testis
- **pTis**: ITGCN
- **pT1**: Confined to testis, no vascular invasion
- **pT2**: Vascular invasion and/or extension through tunica albuginea
- **pT3**: Spermatic cord invasion
- **pT4**: Scrotal invasion

pT Staging of GCT Problems

- No seminoma/non-seminoma differentiation
  - **Seminoma**
    - Size and rete testis invasion not included
    - Vascular invasion not useful in seminoma
  - **Non-seminoma**
    - Percentage embryonal carcinoma not included
    - Invasion of hilar fat and epididymis invasion not included
    - Variable interpretation of pT stage definitions