15.
Seminoma

Background

Stage I seminoma has between a 15–20% risk of relapse; surveillance without treatment is one option. Relapses principally occur in the para-aortic nodes and the risk can be quantifield using factors related to the primary tumour.[1] A tumour >4 centimetres (cm) in size is the most important of these; rete testis involvement may also be a predictor.[2] Adjuvant treatment rather than surveillance may be offered in such cases.

A single dose of carboplatin has been shown to achieve results equal to radiotherapy in terms of overall tumour control and early survival in the TE19 randomised trial.[3] In the UK this approach has now become the standard (Level 1b).[4]

If radiotherapy is considered in this setting then a dose of 20 Gray (Gy) in ten daily fractions treating the para-aortic node chain only has been shown to be as effective as 30 Gy or larger fields (Level 1b).[4,5]

Radiotherapy may also be considered for selected patients with stage IIA and IIB seminoma where there are metastatic para-aortic nodes up to 5 cm.[6] A dose of 30 Gy in 15 daily fractions to the para-aortic nodal chain and ipsilateral iliac nodes is recommended. A boost of 5 Gy to enlarged lymph nodes may be considered (Level 2b).[4,7,8] An alternative approach uses a single dose of carboplatin with radiation fields reduced to the involved para-aortic region only (Level 1b).[4,9]

Radiotherapy carries an excess risk of death as a result of radiation-induced cardiac disease or second cancer.[5] Thirty-year follow-up shows that the relative risk of second malignancy is 1.4; this translates into an increase in the risk of cancer from 15% for the normal population to 25% for the seminoma cohort at 30 years (Level 2b).[4,10]

Recommendations

Single agent carboplatin will be the usual adjuvant treatment for high-risk stage I disease seminoma (Grade B)

Stage I seminioma for which adjuvant para-aortic radiotherapy is indicated:

20 Gy in 10 fractions over 2 weeks (Grade A)

Stage IIA or IIB seminoma: para-aortic and ipsilateral iliac radiotherapy (dog leg) or para-aortic radiotherapy alone after carboplatin:

30 Gy in 15 fractions over 3 weeks (Grade B)

The types of evidence and the grading of recommendations used within this review are based on those proposed by the Oxford Centre for Evidence-based Medicine.[4]

References

1. Warde P, Specht L, Horwich A *et al*. Prognostic factors for relapse in stage I seminoma managed by surveillance: a pooled analysis. *J Clin Oncol* 2002; **20**(22): 448–452.
2. Chung P, Daugaard G, Tyldesley S *et al*. Evaluation of a prognostic model for risk of relapse in stage I seminoma surveillance. *Cancer Med* 2015; **4**(1): 155–160.
3. Oliver RT, Mead GM, Rustin GJ *et al*. Randomized trial of carboplatin versus radiotherapy for stage I seminoma: mature results on relapse and contralateral testis cancer rates in MRC TE19/EORTC 30982 study (ISRCTN27163214). *J Clin Oncol* 2011; **29**(8): 957–962.
4. www.cebm.net/oxford-centre-evidence-based-medicine-levels-evidence-march-2009 (last accessed 30/9/16)
5. Jones WG, Fossa SD, Mead GM *et al*. Randomised trial of 30 versus 20 Gy in the adjuvant treatment of stage I testicular seminoma: a report on Medical Research Council Trial TE18, European Organisation for the Research and Treatment of Cancer Trial 30942 (ISRCTN 18525328). *J Clin Oncol* 2005; **23**(6): 1200–1208.
6. Giannatempo P, Greco T, Mariani L *et al*. Radiotherapy or chemotherapy for clinical stage IIA and IIB seminoma: a systematic review and meta-analysis of patient outcomes. *Ann Oncol* 2015; **26**(4): 657–656.
7. Oldenburg J, Fosså SD, Nuver J *et al*. Testicular seminoma and non-seminoma: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up. *Ann Oncol* 2013; **24**(Suppl 6): vi125–vi132.
8. Tandstad T, Smaaland R, Solberg A *et al*. Management of seminomatous testicular cancer: a binational prospective population-based study from the Swedish Norwegian testicular cancer study group. *J Clin Oncol* 2011; **29**(6): 719–725.
9. Horwich A, Dearnaley DP, Sohaib A, Pennert K, Huddart RA. Neoadjuvant carboplatin before radiotherapy in stage IIA and IIB seminoma. *Ann Oncol* 2013; **24**(8): 2104–2107.
10. Zagars GK, Ballo MT, Lee AK, Strom SS. Mortality after cure of testicular seminoma. *J Clin Oncol* 2004; **22**(4): 640–647.