

## **Initial versus recent outcomes with a non-risk adapted surveillance policy in stage I non-seminomatous germ cell tumors (nsgct)**

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**Background:** Since 1981 the Princess Margaret Hospital testicular cancer group has used surveillance as the preferred management option for all patients (pts) with clinical stage I NSGCT. In a report of the first 105 pts [Sturgeon et al. J Clin Oncol, 1992] the relapse rate was 35% and the disease specific 5-year survival 99%. Improvements in imaging technique over time could cause stage migration with an overall lower relapse rate in this patient population. We compare our experience with surveillance over different time points.

**Methods:** Three-hundred and five pts with stage I NS-GCT were placed on an active surveillance protocol between 1981-2004. They were not stratified by risk and only received treatment on the event of a relapse. Recurrence rates, time to relapse, risk factors predictive for recurrence, disease specific and overall survival were determined. For the analysis by time period, pts were divided in two groups based on diagnosis date. (**Initial**=1981-1992 [N=141] and **Recent**=1993-2004 [N=164]).

**Results:** With a median follow-up of 6.3 years, 77/305 pts (25%) relapsed; 46/141 pts (32.6%) in the initial group and 31/164 (18.9%) in the recent. All but 3 (4%) relapses occurred within 2 years after orchiectomy with a median time to relapse of 7 months. A multivariate analysis established lympho-vascular invasion ( $p<0.01$ ) and pure embryonal carcinoma ( $p=0.03$ ) as independent predictors of recurrence. Overall 104/305 (34.1%) pts were designated as 'high-risk' based on the presence of at least one of these factors. In the initial group 60/141 (42.6%) pts were high risk and 32/60 (53%) relapsed versus 14/81 (17.3%) low-risk ( $p=0.047$ ). In the recent group 44/164 (26.8%) pts were high-risk and 17/44 (38.6%) recurred, versus 14/120 (11.7%) low-risk ( $p<0.001$ ). There were 2 (0.7%) deaths due to testis cancer. The estimated 5-year disease specific survival was 98.9% in the initial group and 100% in the recent one.

**Conclusion:** Surveillance is an effective strategy for the management of all stage I NSGCT. A risk-adapted policy would result in more than 50% of the patients being unnecessarily treated. The relapse rate has reduced over time, likely due to improvements in imaging causing stage migration.