

Cause-Specific Mortality and Late Morbidity in Adult Patients with Hodgkin Lymphoma

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Background: Increased late mortality and morbidity have been observed among adult survivors of Hodgkin lymphoma (HL) treated in childhood, but are less well characterized for patients treated in adulthood. **Methods:** We investigated the late mortality and morbidity of adult patients treated at our center from 1975 to 2000. The study population consisted of all patients treated on one of 6 consecutive first-line trials of combined modality therapy (CMT), one of which included a chemotherapy-only arm. Cause-specific mortality was determined by chart review and National Death Index. Survival was estimated using the method of Kaplan-Meier, and cause-specific mortality using competing risk methodology. Self-report surveys were distributed to surviving patients to assess the prevalence of late morbidity; severity of morbidity was scored based on a published adaptation of the Common Terminology Criteria for Adverse Events. **Results:** 746 patients were eligible for assessment. At time of survey, 227 patients (30.4%) had died: 107 deaths from HL, 100 from causes other than HL, and 20 from unknown cause (Table 1). 20-year OS for the cohort was 71%. Cumulative risk of death due to HL is surpassed by causes other than HL by 22 years post-treatment. Among the 521 survivors, survey data were available for 233 (44.7%), with a median follow-up of 21.6y. Late morbidity was common: 94% reported any morbidity, 48% reported at least one severe (grade 3/4) late morbidity and 22% reported two or more severe late morbidities. The most prevalent severe morbidities included second primary malignancy (SPM) (17%), cardiovascular (CV) (18%) and neurologic (18%) disease. **Conclusions:** Among adults treated on trials of CMT, by 22y post-treatment the risk of death due to HL is surpassed by risk of death due to other causes. Survivors of HL treated during adulthood experience substantial late morbidity. These findings underscore the importance of efforts directed at prevention of and early intervention for late morbidity in adult survivors of HL.

Cause of death	Events	Cumulative incidence of death (95% CI)	
		10-year	20-year
All-cause mortality	227	19.6% (16.9%-22.6%)	28.7% (25.4%-32.3%)
Death due to HL	107	12.8% (10.6%-15.4%)	14.2% (11.9%-17.0%)
Death due to other causes	100	4.9% (3.6%-6.7%)	12.0% (9.7%-14.8%)
Death due to SPM	52	2.7% (1.8%-4.2%)	6.3% (4.6%-8.5%)
Death due to cardiac	27	0.8% (0.4%-1.8%)	3.2% (2.0%-5.0%)
Death due to other	21	1.4% (0.7%-2.5%)	2.5% (1.6%-4.0%)
Death due to unknown cause	20	1.9% (1.1%-3.2%)	2.5% (1.5%-4.0%)