

Pulmonary Complications in Survivors of Childhood and Adolescent Cancer: A report from the Childhood Cancer Survivor Study (CCSS). Ann Mertens *, Yutaka Yasui, Yan Liu, Marilyn Stovall, Ray Hutchinson, Chuck Sklar, Leslie Robison (University of Minnesota, Minneapolis, MN 55455).

Purpose: To investigate pulmonary conditions (PC) among childhood cancer survivors from the CCSS cohort. Method: Using information obtained from questionnaires and medical records on 12,390 five-year survivors of leukemia, lymphoma, brain tumors, neuroblastoma, Wilms' tumor, bone tumors and soft tissue sarcoma we evaluated the rate of first occurrence of selected PC during three time intervals: during therapy (Interval-1), end of therapy to 5 years post diagnosis (Interval-2) and 5+ years post diagnosis (Interval-3). Multivariate analyses were used to determine the relative risk (RR) and 95% Confidence Intervals (CI) associated with PC and exposure to radiation therapy to the chest (RTc), Bleomycin (Bleo) , Cyclophosphamide (CPM), Busulfan (Bu), CCNU, and/or BCNU. Results: [Table] During Interval-3, statistically significant associations were present for: lung fibrosis and RTc (RR =4.3, 95% CI=2.9-6.6); supplemental oxygen and RTc (RR=1.8, CI=1.5-2.2), BCNU (RR=1.4, CI=1.0-2.0), Bleo (RR=1.7, CI=1.2-2.3), Bu (RR=3.2, CI=1.5-7.0), CCNU (RR=2.1, CI=1.4-2.9), CPM (RR=1.5, CI=1.3-1.9); recurrent pneumonia and RTc (RR=2.2, CI=1.4-3.5), CPM (RR=1.6, CI=1.0-2.5); dyspnea, chronic cough and RTc (RR=2.0, 95% CI=1.6-2.4), Bleo (RR=1.9, CI=1.3-2.6), CPM (RR=1.3, CI=1.1-1.6); pleurisy and RTc (RR=1.4, CI=1.1-2.0), Bu (RR=5.1, CI=1.2-21.0). In Time 3, RTc in the absence of pulmonary-toxic chemotherapy was associated with a 5.3% cumulative incidence of lung fibrosis at 20 years. Conclusion: PC continue to manifest 5+ years from diagnosis and treatment-related factors are important determinants of risk. Continued follow-up of childhood cancer survivors is needed to evaluate the impact of PC on quality of life.

Condition	Total # (%)	First occurrence (Rates/ 1000 person years)		
		Interval-1	Interval- 2	Interval-3
Lung fibrosis	383 (3.1%)	4.8	2.2	0.9
Supplemental oxygen	1191 (9.6%)	12.6	3.0	4.2
Recurrent pneumonia	156 (1.3%)	1.1	0.5	0.7
Dyspnea, chronic cough	917 (7.4%)	6.6	3.3	4.0
Pleurisy	363 (2.9%)	1.6	1.2	1.9
Abnormal chest wall	158 (1.3%)	1.2	0.8	0.4