TEMPORAL CHANGES IN TREATMENT EXPOSURES IN THE CHILDHOOD CANCER SURVIVOR STUDY (CCSS)

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Background: Well-designed epidemiologic investigations of pediatric cancer survivors inform clinical practice guidelines and future clinical trials. Expansion of the CCSS cohort to include survivors diagnosed across three decades (1970-99) affords the opportunity to evaluate associations between key temporal changes in survivor treatment characteristics and risk for adverse health outcomes.

Methods: We summarized changes in cancer and treatment characteristics of 24,000 CCSS participants. Treatment exposures were abstracted from medical records. Trends across 5 year intervals were evaluated using logistic regression models with weights to account for sampling probabilities.

Results: Within the expanded CCSS, use of chemotherapy significantly increased overall (Table, T1-T6) and for each diagnosis except leukemia which was always 100%. Exposure to radiation (RT) decreased overall and for each diagnosis except soft tissue sarcoma. Overall, chest RT exposure was reduced and notably, exposures of ≥ 30 Gy declined from 85% to 6% (T1 to T6) for Hodgkin lymphoma. Use of anthracyclines (ANT) increased significantly, predominantly for doses lower than 250 mg/m^2.

	% With Exposure					
	T1 1970-74	**T2 1975-79**	**T3 1980-84**	**T4 1985-89**	**T5 1990-94**	**T6 1995-99**
Any RT*	79	75	64	50	40	34
RT to brain*	30	36	32	24	18	16
RT to abdomen*	28	22	19	12	8	9
RT to chest ≥ 30 Gy*	21	13	8	4	1	1
Any Chemotherapy*	75	81	81	85	86	87
ANT 1-250 mg/m^2*	3	12	18	34	45	52
ANT >250 mg/m^2*	11	24	24	23	17	14
Any epipodophyllotoxins*	1	4	9	25	34	36
*Trend p-value <0.0001						

Conclusions: The expansion of the CCSS cohort provides a unique resource to evaluate the impact of historical changes in primary cancer therapy, including reduction of therapeutic intensity for low- and standard-risk populations as well as intensification of specific therapies for high-risk populations, on health and psychosocial outcomes.