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Respiratory morbidity in young people surviving cancer: population-based study of hospital admissions, treatment-related risk factors and subsequent mortality

Lesley Smith, Adam W Glaser, Daniel Peckham, Darren C Greenwood, Richard G Feltbower

Supplementary tables and figures

Supplementary table 1: Number of admissions by respiratory condition based in ICD10 chapter headings

Group	ICD-10 codes	Number survivors admitted
Any respiratory disease	J00-J99	667
Acute upper respiratory infections	J00-J06	132
Influenza and pneumonia	J09-J18	136
Other acute lower respiratory infections	J20-J22	132
Other diseases of upper respiratory tract	J30-J39	107
Chronic lower respiratory diseases	J40-J47	320
Lung diseases due to external agents	J60-J70	26
Other respiratory diseases principally affecting the interstitium	J80-J84	19
Suppurative and necrotic conditions of lower respiratory tract	J85-J86	11
Other diseases of pleura	J90-J94	74
Other diseases of the respiratory system	J95-J99	83

Individuals may be admitted for more than one condition

Abbreviations: ICD-10: International Classification of Diseases, version 10

Supplementary table 2: Observed and expected admissions and hospitalisation rate ratio (HRR) comparing admissions among cancer survivors with the general population by age at diagnosis and diagnostic group

	Any respiratory admission		
	Observed admissions	Expected admissions	HRR (95% CI)
All ages			
Leukaemia (n=725)	142	61	2.32 (1.97, 2.74)
Lymphoma (n=950)	158	82	1.92 (1.64, 2.24)
CNS tumours (n=619)	103	50	2.05 (1.69, 2.49)
Germ cell tumours (n=869)	88	73	1.21 (0.98, 1.49)
Children (0-14 years at diagnosis)			
Leukaemia (n=522)	111	46	2.40 (1.99, 2.89)
Lymphoma (n=202)	36	18	2.06 (1.48, 2.85)
CNS tumours (n=344)	68	31	2.22 (1.75, 2.81)
AYA (15-29 years at diagnosis)			
Leukaemia (n=201)	31	15	2.09 (1.47, 2.98)
Lymphoma (n=745)	122	65	1.88 (1.57, 2.25)
CNS tumours(n=273)	35	20	1.78 (1.28, 2.49)
Germ cell tumours (n=779)	75	65	1.16 (0.92, 1.45)
Carcinomas (n=383)	63	30	2.11 (1.65, 2.71)

For all ages and children diagnosis based on ICCC-3 classification, for AYA diagnosis based on Birch classification

Abbreviations: O: observed; E: expected; HRR: hospitalisation rate ratio; CI: confidence interval; CNS: Central Nervous System; AYA: adolescents and young adults

Supplementary table 3: Association between treatment exposure and risk of admission for respiratory disease with death as a competing risk, unadjusted model results

		Any respiratory sHR (95%CI)	Asthma sHR (95%CI)	Pneumonia sHR (95%CI)	Lower respiratory sHR (95%CI)
Treatment exposure					
Pulmonary toxic chemotherapy	No	1.0	1.0	1.0	1.0
	Yes	1.14 (0.97, 1.34)	1.00 (0.78, 1.29)	1.65 (1.17, 2.32)	1.44 (0.80, 2.58)
Chest radiotherapy	No	1.0	1.0	1.0	1.0
	Yes	1.24 (0.89, 1.72)	1.18 (0.72, 1.94)	1.67 (0.90, 3.09)	2.02 (0.79, 2.13)
Thoracic surgery	No	1.0	1.0	1.0	1.0
	Yes	1.18 (0.52, 2.70)	0.86 (0.21, 3.61)	1.87 (0.46, 7.55)	7.96 (2.50, 25.4)

Abbreviations: sHR: subdistribution hazard ratio; CI: confidence interval

Supplementary table 4: Number (%) of readmissions following hospitalisation

	N (%)
<hr/>	
Readmission for any respiratory conditions (after admission for any respiratory disease N=667)	
No readmission	364 (54.6)
1 readmission	116 (17.4)
2 readmissions	66 (9.9)
3+ readmissions	121 (18.4)
<hr/>	
Readmissions for pneumonia (after admission for pneumonia n=134)	
No readmission	101 (75)
1 readmission	17 (13)
2+ readmissions	16 (12)

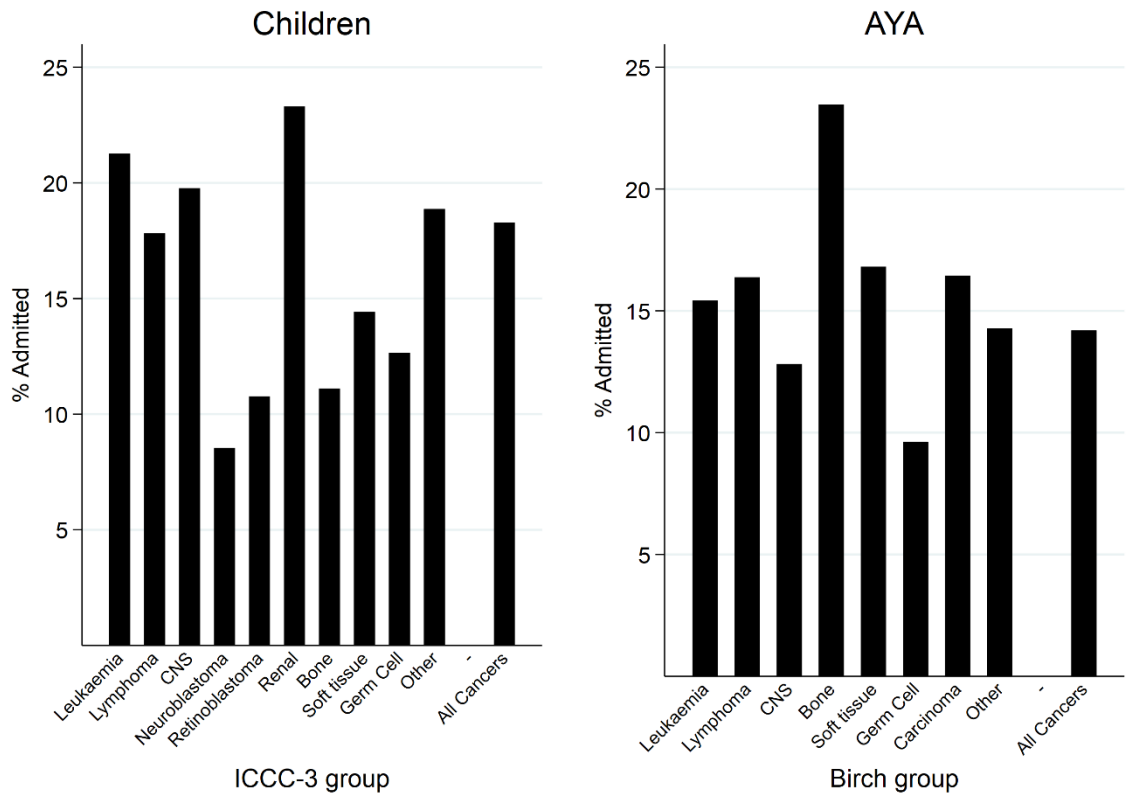
Supplementary table 5: Observed and expected number of admissions and hospitalisation rate ratio (HRR) (and 95%CI) by admission type based on primary diagnosis for admissions only

	Observed admissions	Expected admissions	HRR (95% CI)
Any respiratory admission	352	194	1.82 (1.64, 2.02)
Asthma	22	25	0.89 (0.59, 1.35)
Pneumonia	96	25	3.82 (3.12, 4.66)
Chronic lower respiratory disease	13	4	3.26 (1.89, 5.61)

HRR not calculated for lung fibrosis or respiratory conditions due to other external agents due to small numbers

Abbreviations: HRR: hospitalisation rate ratio; CI: confidence interval

Supplementary figure 1: Percentage of survivors admitted for a respiratory condition by diagnostic group for children and AYA



Abbreviations: ICCC-3: International Classification of Childhood Cancer version 3; AYA: adolescents and young adults

Supplementary figure 2: Cumulative incidence of respiratory admission by attained age based on primary diagnosis only

