

Factors associated with Emergency Admissions for Cancer Patients in Last year of life in a UK region

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Background and Aim

- There is increased interest in the place and timing of end-of-life care for people dying from cancer in Northern Ireland (NI). Emergency hospital admissions for end-of-life cancer patients may indicate gaps in routine cancer care.
- The NICR has previously investigated reasons why cancer patients die in acute hospitals (1) and factors enabling cancer patients to die at home (2).
- The study aimed to explore factors associated with a patient having an emergency admission recorded in the last year of life

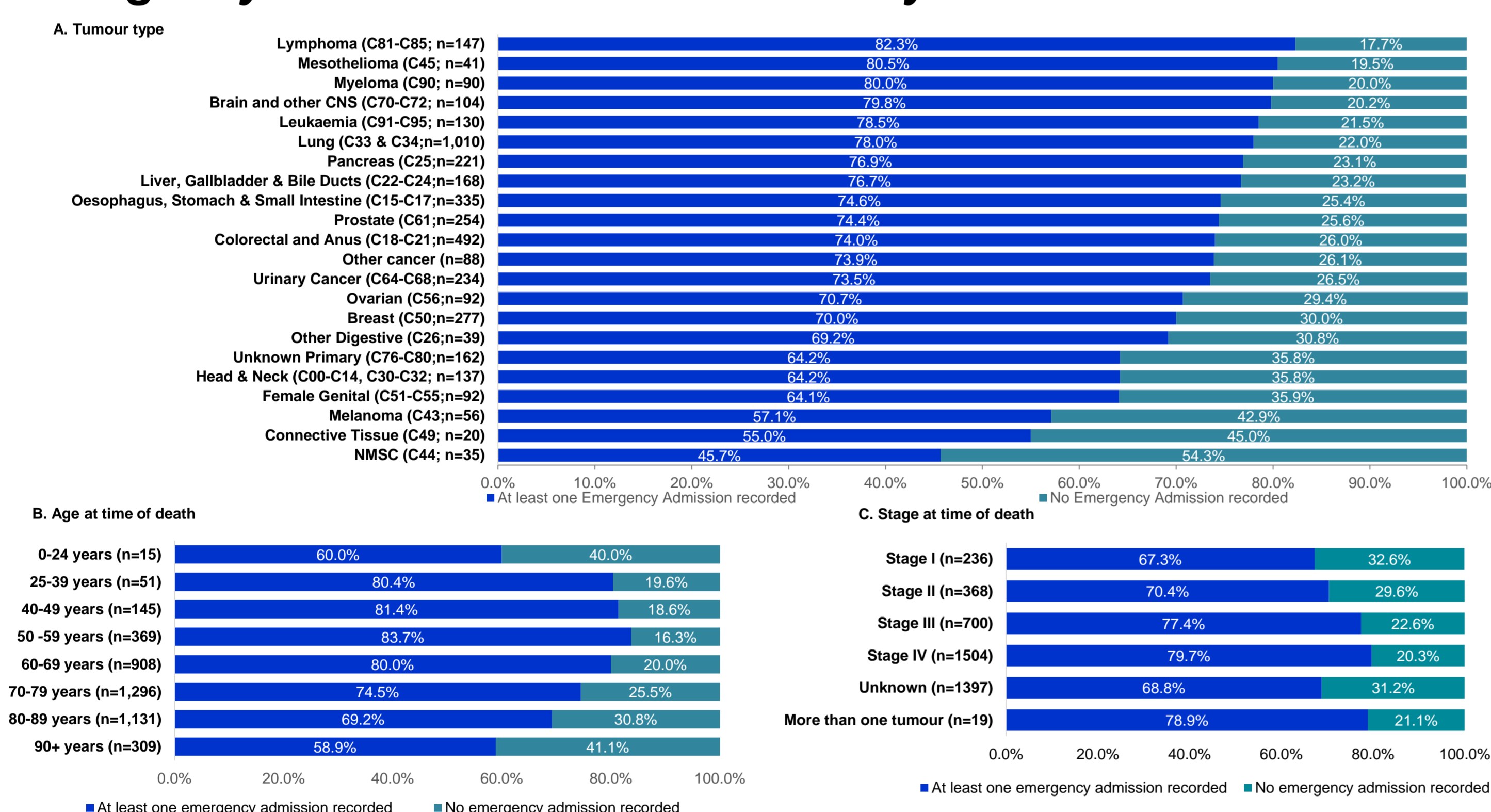
Methods

- Data on all cancer deaths in NI in 2015 (n= 4,316) were extracted from the NICR database and linked with Patient Administration System (PAS) episodes relating to emergency admissions in the last year of life.
- Logistic Regression was used to relate independent variables to the binary outcome variable of whether or not a person had an emergency admission recorded in last year of life. The potential independent variables to be included in the model were grouped into the following categories: *Patient demographics*: sex, age at time of death, marital status, deprivation, rurality, *Disease characteristics*: tumour type, stage at diagnosis and time from diagnosis, *Emergency admission*: number of admissions in last year, timing of admission, place of death.

Results

- Of 4,316 people who died of cancer in NI in 2015, almost three out of four (74%; n=3,134) had at least one emergency admission recorded in their last year of life, with 17% of people having three or more admissions

Figure 1. Socio-demographic characteristics of people who had an emergency admission recorded in last year of life and those who did not



- A higher proportion of males were admitted as an emergency (75.3%) when compared with females (74.0%; p=0.009). A higher proportion diagnosed with a haematological, lung or brain tumours and a lower proportion diagnosed with skin and female genital and unknown primary were admitted as an emergency in their last year of life. (p<0.001).
- The proportion of people having an emergency admission recorded varied by age (60.0% for people aged 0-24 years, 80.4% for those aged 25-39 years and 66.2% for those people aged 80 years and over; p<0.001). No differences by deprivation quintile (p=0.064) or rurality (p=0.114) were observed

Conclusion and Future Work

- Large numbers of cancer patients have at least one emergency admission in their last year of life with tumour site, later stage, shorter time from diagnosis to death and place of death in hospital or hospice shown to be factors associated with having an emergency admission in the last year of life. These findings will help inform future changes in emergency care for cancer patients at end-of-life in NI.

Acknowledgements

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Table 2. Logistic Regression Model – Factors associated with having at least one emergency admission recorded in last year of life

| | Odds Ratio | 95%CI | p |
|-------------------------------------|------------|-----------|--------|
| Tumour Site | | | |
| Brain & CNS (Ref) | 1.34 | 0.77 2.36 | 0.301 |
| Breast | 0.57 | 0.38 0.86 | 0.007 |
| Colorectal & Anus | 0.61 | 0.43 0.88 | 0.008 |
| Haematological | ---- | ---- | ---- |
| Head & Neck | 0.32 | 0.20 0.52 | <0.001 |
| Lung & Mesothelioma | 0.70 | 0.50 0.99 | 0.045 |
| Other digestive | 0.69 | 0.50 0.96 | 0.029 |
| Urinary | 0.61 | 0.40 0.93 | 0.022 |
| Prostate | 0.75 | 0.50 1.13 | 0.180 |
| Unknown primary | 0.52 | 0.33 0.80 | 0.003 |
| Other | 0.42 | 0.30 0.61 | <0.001 |
| Stage at Diagnosis | | | |
| Stage I (Ref) | ----- | ----- | ----- |
| Stage II | 1.24 | 0.86 1.81 | 0.250 |
| Stage III | 1.69 | 1.20 2.38 | 0.003 |
| Stage IV | 1.89 | 1.36 2.62 | <0.001 |
| Unknown | 1.00 | 0.72 1.40 | 0.979 |
| Time from Diagnosis to Death | | | |
| 0 to 28 days (Ref) | ----- | ----- | ----- |
| 1 to 3 months | 1.35 | 1.03 1.78 | 0.028 |
| 3 to 6 months | 1.75 | 1.29 2.38 | <0.001 |
| 6 to 9 months | 2.49 | 1.75 3.54 | <0.001 |
| 9 to 12 months | 1.85 | 1.28 2.67 | 0.001 |
| 1-2 years | 1.60 | 1.19 2.15 | 0.002 |
| 2-3 years | 1.70 | 1.22 2.37 | 0.002 |
| 3-4 years | 1.35 | 0.91 1.99 | 0.135 |
| 4-5 years | 1.21 | 0.77 1.89 | 0.404 |
| 5-10 years | 1.08 | 0.76 1.52 | 0.671 |
| 10 years+ | 1.48 | 1.00 2.20 | 0.052 |
| Place of Death | | | |
| Home (Ref) | ----- | ----- | ----- |
| Hospital | 3.41 | 2.85 4.07 | <0.001 |
| Hospice | 1.64 | 1.29 2.10 | <0.001 |
| Nursing home | 1.00 | 0.80 1.26 | 0.947 |
| Other | 1.30 | 0.81 2.09 | 0.274 |

- In the final model, factors positively associated with having had an emergency admission recorded in the last year of life were having head and neck cancer, dying in hospital or hospice, presenting with later stage disease and a shorter time from diagnosis to death

References

- Why do cancer patients die in acute hospitals (2011) NICR
- Dying with cancer- Perspectives of Bereaved Relatives and Friends (2015) NICR