Comorbidity

Comorbidity data capture

Electronic forms for capturing clinician entered data on patients diagnosis and stage (DS) were first designed in 2011 and have since been gradually phased for all diagnosis groups. These innovative new forms are enabling a wealth of data, previously only recorded within patient case notes, to be captured in a structured format. Such data allow us to have a much better understanding of outcomes for patients treated at The Christie and to monitor these outcomes over time. One key element of this is patient comorbidity status. Being able to account for other conditions patients have in addition to cancer (comorbidity) is vital to fully understanding patient outcomes. Data presented here is our first assessment of this new data source focussing on 4 cancer types, vulva, cervix, breast and non-small cell lung (NSCL) cancer.
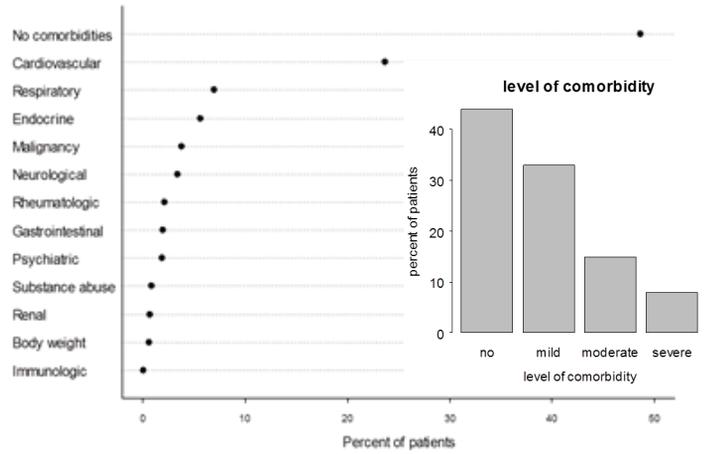

Fig. 1. Levels of comorbidity and distribution of comorbidities recorded. Overall comorbidity score : 0 = none,1 = mild,2 = moderate,3 = severe

Comorbidity prevalence

50% of patients have no comorbidities recorded (Fig. 1). Cardiovascular and respiratory comorbidities are the most common conditions which is concordant with patterns observed in the general UK population.

Relative prevalence

Incidence of comorbidity type appears to vary by cancer type (Fig. 2). Further investigation is needed as this may indicate a bias of data capture rather than a true relationship between cancer and comorbidity.
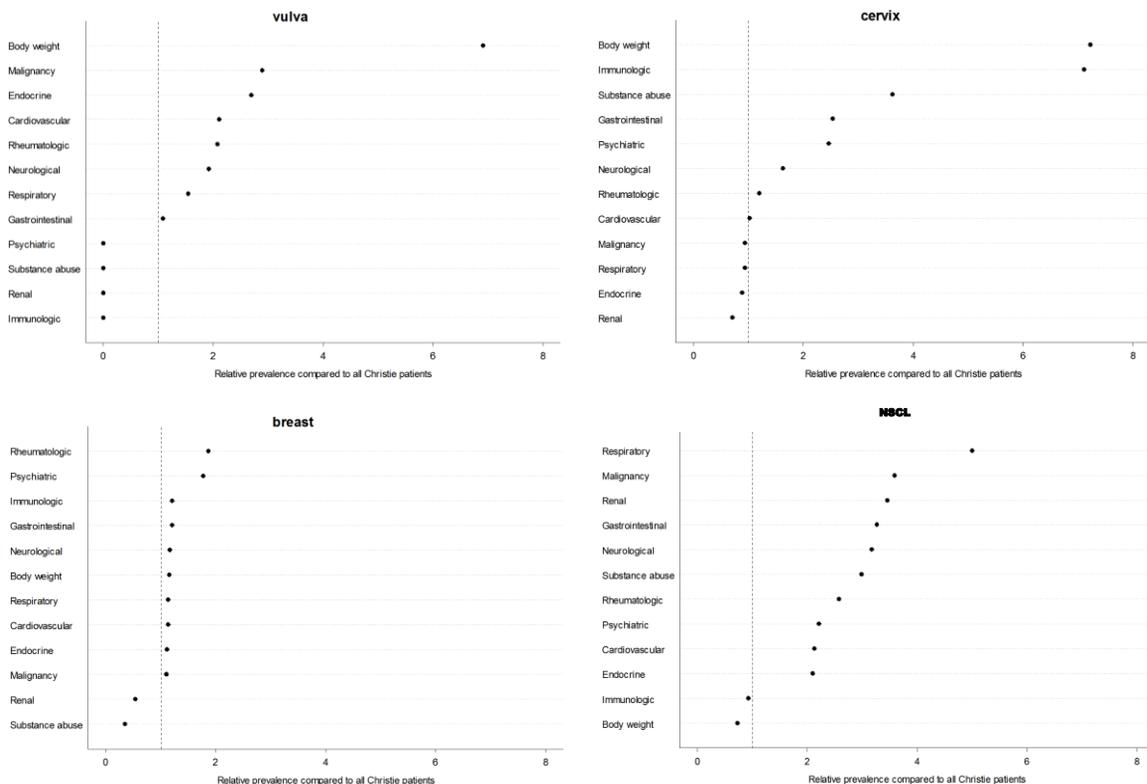

Fig. 2. Relative prevalence of comorbidity conditions for vulva, cervix, NSCL and breast cancer. This is relative to comorbidity conditions among all other patients (all other cancer types).
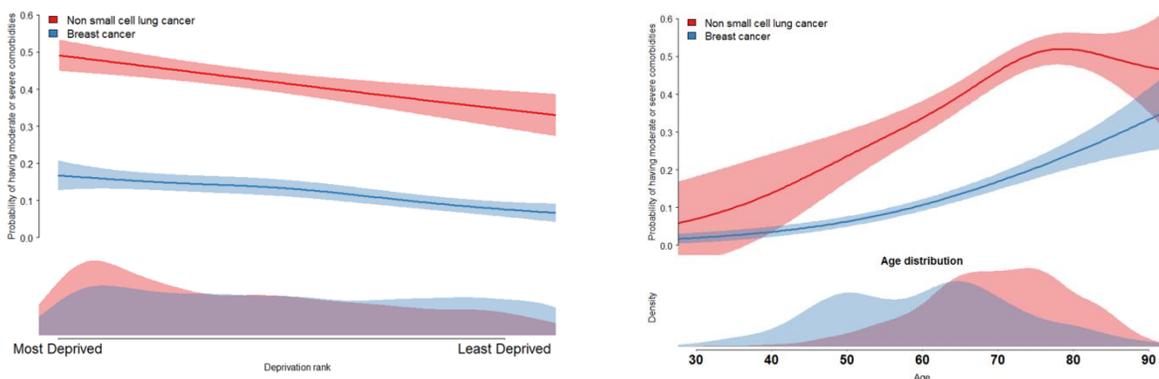
Fig. 3. Relationship between severe comorbidity, age and severe comorbidity and socio-economic status for non-small cell lung and breast cancer.
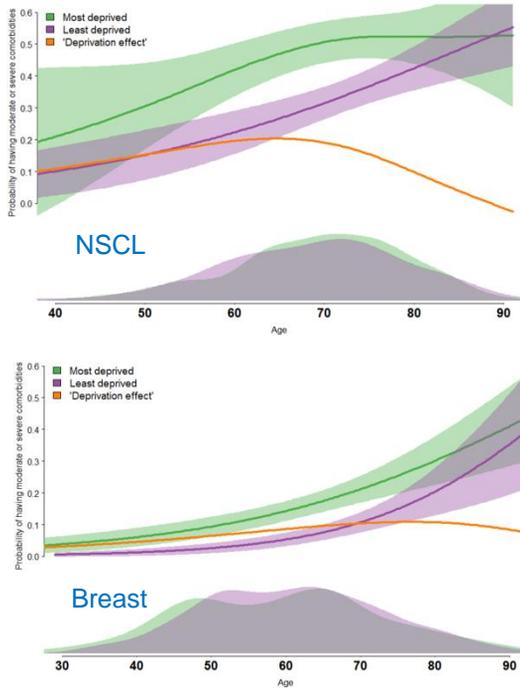

NSCL

Breast

Fig. 4. Relationship between severe comorbidity, age and socio-economic status among patients with non-small cell lung and breast cancers.

The relationship between comorbidity and stage at diagnosis for different types of cancers is complex. Similarly the relationship between survival and comorbidity (Fig 5). These associations need to be interpreted alongside information related to the point in the patient pathway that patients are referred to The Christie , stage at diagnosis and the treatments received by patients at the Trust.
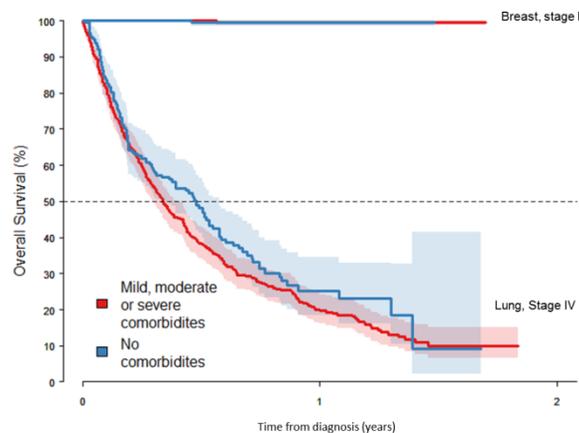

Fig. 5. Relationship between comorbidity status and survival among patients with non-small cell lung and breast cancers (adjusted to the most common stage for each cancer type).

Amongst non-small cancer lung and breast cancer patients, older people are more likely to have moderate or severe comorbidity (Fig 3). Patients with NSCL cancer are more likely to be from more deprived areas than breast cancer patients. Lung and breast cancer patients who live in more deprived areas are slightly more likely to have a severe level of comorbidity.

Figure 4 shows the interactive relationship between comorbidity, age and deprivation in NSCL cancer patients. In both the most and least deprived quartiles, comorbidities increase with age and for any given age the most deprived have more comorbidities. The difference between deprivation groups (the 'deprivation effect') peaks at around 65 years, decreasing to zero in the oldest patients.

Conclusion
Routinely collected, high quality, structured data allows us to easily investigate relationships between comorbidity, demographics and other variables, vital for fully understanding outcomes. While these are exploratory analyses, our findings highlight some interesting areas for further investigation, particularly the interactions between age and deprivation. To maximise our usage of these data, similar data needs to be recorded, in a consistent way, for all cancer patients across the UK. The Christie is leading the way in capturing data in this way.

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