Declaration of interest

None declared.

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Long-stay patients with cancer on the intensive care unit: characteristics, risk factors, and clinical outcomes

Editor—Published literature on outcomes of patients with prolonged admissions to general intensive care units (ICUs) have demonstrated increased mortality, morbidity, and resource requirements.[1–6] However, studies have yet to specifically consider long-stay ICU patients with cancer. Critically ill cancer patients pose a challenge to healthcare systems, as the impact of critical care on cancer progression is largely unknown and critical illness itself often precludes aggressive cancer therapy in the ICU setting. These considerations have contributed to speculation that long-stay critically ill cancer patients may survive their ICU stay only to succumb to their cancer soon after discharge, leading some healthcare funders to question the value of prolonged ICU care in this group of patients.

The aim of this study was to determine the clinical characteristics and outcomes of long-stay ICU patients with cancer and also to identify prognostic risk factors of outcome in this group. Retrospective data on cancer diagnosis, pre-admission chemotherapy, APACHE II score, laboratory tests, organ support, and reason for ICU admission were collected on all cancer patients admitted to the Royal Marsden Hospital ICU, a tertiary referral centre for cancer in the UK, with an ICU stay >16 days during a 6 yr period (January 2006–2012). The definition of long stay was based on 2 standard deviations from the mean length of stay in our unit.

Two hundred and three patients met the criteria for inclusion in the study. Long-stay patients accounted for 2.6% of total ICU admissions, but 24.0% of ICU budget. The most prevalent cancer diagnoses for long-stay ICU patients were haematological (65 patients; 32.0%) and upper gastrointestinal (51 patients; 25.1%) malignancies. Common reasons for ICU admission were elective surgery (88 patients; 43.3%); respiratory failure (37 patients; 18.2%), and sepsis (36 patients; 17.7%). ICU, in-hospital, and 12 month mortality for all long-stay ICU patients with cancer were 25.6% (52 patients), 32.5% (66 patients), and 48.3% (98 patients), respectively. Risk factors associated with outcome in long-stay patients were investigated using the univariate logistic and Cox proportional hazards regression. For each outcome, clinical risk factors associated with ICU, in-hospital, 12 month mortality, and time to death (P<0.05) were chosen from the corresponding univariate tests for inclusion in the multivariate model. Interestingly, age, type of cancer, disease status, and APACHE II score on admission were not found to be significantly associated with outcome in long-stay cancer patients. For time to death after admission to ICU, respiratory failure [present *vs* absent, hazard ratio (HR) 2.1, 95% confidence interval (CI) 1.2–3.7, P=0.01], steroid use (present *vs* absent, HR 2.2, 1.4–3.4, P<0.001), and chemotherapy before ICU admission (yes *vs* no, HR 2.7, 1.6–4.7, P<0.001) were significantly associated with outcome.

Table 1. Multivariate regression analysis: significant clinical predictors associated with ICU, in-hospital, and 12 month mortality, and time to death after admission to ICU for long-stay critically ill cancer patients. For categorical variables, ORs are provided. HRs are provided for time to death from ICU admission. P-values <0.05 are shown in bold

Variable	ICU mortality		In-hospital mortality		12-month mortality		Time to death	
	OR (95% CI)	*P*-value	OR (95% CI)	*P*-value	OR (95% CI)	*P*-value	HR (95% CI)	*P*-value
Respiratory failure	1.3 (1.0–1.3)	**0.02**	1.2 (0.99–1.5)	0.06	1.2 (0.94–1.5)	0.15	2.1 (1.2–3.7)	**0.01**
Renal replacement	1.2 (1.0–1.3)	**0.03**	1.2 (1.1–1.4)	**0.002**	1.1 (0.97–1.3)	0.13	1.3 (0.82–1.9)	0.3
Steroids	1.4 (1.2–1.6)	**<0.001**	1.4 (1.3–1.7)	**<0.001**	1.4 (1.2–1.6)	**<0.001**	2.2 (1.4–3.4)	**<0.001**
Chemotherapy	1.3 (1.0–1.5)	**0.02**	1.3 (1.1–1.6)	**0.003**	1.5 (1.2–1.9)	**<0.001**	2.7 (1.6–4.7)	**<0.001**

Steroid use and chemotherapy were also significant risk factors for 12 month mortality [odds ratio (OR) 1.4, 1.2–1.6, $P<0.001$ and OR 1.5, 1.2–1.9, $P<0.001$, respectively] (Table 1).

Our ICU, in-hospital, and 12 month mortality are comparable with published studies in non-cancer populations of ICU long stayers, allowing for differences in case mix and definition of long stay.[1–6]

We report that more than half of long-stay critically ill cancer patients survive 1 yr or more. Our data demonstrate that even within the group of long-staying cancer patients on ICU, there are patients who have good long-term prognosis. Here, we were also able to identify several risk factors for increased mortality (respiratory failure, chemotherapy before ICU admission, and use of steroids) that if validated could aid in individual patient risk stratification for long-stay oncology patients in the ICU and serve as starting points for future investigations to improve the outcomes of this patient subgroup.

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Key-ring data sheet to provide critical information required in managing paediatric emergencies

Editor—Emergency situations in paediatric anaesthetic practice are extremely stressful for all involved. In these scenarios, even small errors in calculations can prove to be catastrophic for the patient. Anaesthetic trainees are frequently required to anaesthetize paediatric patients in an emergency setting and need a robust system for obtaining clinical information to ensure patient safety.

A recent survey at Nottingham University Hospitals revealed that anaesthetists of all grades felt under confident when managing children <5 yr of age, especially as the ASA grade increased. In an effort to address this, we developed a Paediatric Anaesthetic Emergency handbook from local and national guidelines. To accompany this, we also produced a key-ring with a 'pull-out', double-sided information sheet (Fig. 1 on next page). This key-ring data sheet contains useful formulae and normal physiological data, as well as drug dosing and infusion preparation information, all colour-coded using the standard anaesthetic drug labelling format. The aim of this device was to provide the anaesthetist with critical information quickly and easily, without the need to access electronic information sources, which can be difficult or impossible to do during an emergency.

These key-ring devices have proved to be an extremely popular and highly convenient information source with anaesthetic trainees and consultants (both paediatric and non-paediatric) alike. Indeed, they now seem to be the ubiquitous attachment to all anaesthetic department ID badges! We have also received a lot of interest from other departments around the hospital, including the paediatric intensive care unit, paediatric emergency department, general paediatrics, and the neonatal unit. We have now begun, in discussion with these departments, to develop speciality-specific versions of the key-ring data sheet for each of these areas.

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Knowledge related to anaesthesia among laypeople

Editor—An audit to assess the knowledge related to anaesthesia in laypeople was recently carried out. A questionnaire, based on an AAGBI patient information leaflet '*Anaesthesia Explained*',[1] was completed by 73 patients randomly selected from those attending a rural GP practice. Questions were asked on the qualifications and roles of the anaesthetist, and some of the common side-effects of anaesthesia.

Of the 73 participants, 93.2% (n=68) knew that anaesthetists were medically qualified; however, only 43.8% (n=32) identified the anaesthetist as a doctor, with 41% (n=30) mistaking the anaesthetist for an Operating Department Practitioner. The minimum training period of an anaesthetist from