Psychotropic prescribing after hospital discharge in survivors of critical illness, a retrospective cohort study (2012-2019)

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Background

Many people survive critical illness with the burden of new or worsened mental health issues and sleep disturbances. We examined the frequency of psychotropic prescribing after critical illness, comparing critical care to non-critical care hospitalised survivors, and whether this varied in important subgroups.

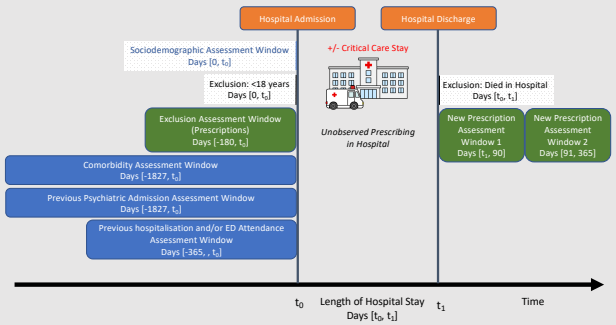
Objectives

Our first aim was to examine prescribing after critical illness in all survivors grouped by: 1) any psychotropic (aggregate of the following); 2) antidepressants; 3) anxiolytics or hypnotics; and 4) antipsychotics or mania drugs. Our second aim was to examine the incidence of *new* psychotropic drug prescribing after hospitalisation, comparing critical care survivors to non-critical care hospitalised survivors in the Lothian region of Scotland.

Methods

This retrospective cohort study included 23,340 critical care and 367,185 non-critical care hospitalised adults from 2012 to 2019 in Lothian, Scotland, who survived to discharge. Cause-specific hazards ratios (HR) with 95% confidence intervals were estimated, both unadjusted and adjusted for sex, age group, deprivation quintile, main condition at hospital admission, comorbidity category, previous hospital admissions category, and previous emergency attendances category (categories of 0, 1, 2+).

Figure 1: Graphical depiction of study design



Results

One-third of critical care survivors received a psychotropic prescription within 90 days after hospital discharge. In contrast, 15% of non-critical care survivors received a psychotropic prescription. In psychotropic-naïve survivors, the critical care group had a higher incidence of psychotropic prescription (10.3%) compared with the non-critical care group (3.2%); unadjusted hazard ratio (HR) 3.39, 95% CI: 3.22 – 3.57. After adjustment, the risk remained elevated (adjusted HR 2.03, 95% CI: 1.91 – 2.16), persisted later in follow-up (90-365 day; adjusted HR 1.38, 95% CI: 1.30 – 1.46), and was more pronounced in those without recorded comorbidities (adjusted HR 3.49, 95% CI: 3.22 – 3.78).

Table 1 Medicines prescribed to hospitalised patients within 90 days of hospital discharge by drug class in the full study population and in the subgroup of psychotropic-naïve hospitalised survivors *(% calculated using denominator in row header)*

Drug class	Full Study Population		Psychotropic-naïve patients	
	Critical care n = 23,340 (%)	Non-crit care n = 367,185 (%)	Critical care n = 15,609 (%)	Non-crit care n = 307,429 (%)
No psychotropic	15,813 (67.8)	312,596 (85.1)	13999 (89.7)	297,686 (96.8)
Any psychotropic	7527 (32.2)	54,589 (14.9)	1610 (10.3)	9743 (3.2)
Antidepressants	5734 (24.6)	44,604 (12.1)	868 (5.6)	6241 (2.0)
SSRI/SNRI	3033 (13.0)	26,285 (7.2)	337 (2.2)	2799 (0.9)
Tricyclic and related	2086 (8.9)	13,673 (3.7)	344 (2.2)	2365 (0.8)
Other antidepressants	1473 (6.3)	10,218 (2.8)	234 (1.5)	1362 (0.4)
Anxiolytics or hypnotics	3197 (13.7)	17,276 (4.7)	873 (5.6)	3934 (1.3)
Benzodiazepines	1977 (8.5)	11,762 (3.2)	375 (2.4)	2283 (0.7)
Z-drugs	1482 (6.3)	6353 (1.7)	551 (3.5)	1768 (0.6)
Other anxiolytic or hypnotic	121 (0.5)	714 (0.2)	33 (0.2)	137 (<0.1)
Antipsychotics or drugs for mania	937 (4.0)	6453 (1.8)	114 (0.7)	842 (0.3)
First generation antipsychotics	326 (1.4)	2278 (0.6)	62 (0.4)	479 (0.2)
Second gen antipsychotics	612 (2.6)	4221 (1.2)	53 (0.3)	390 (0.1)
Drugs for mania	72 (0.3)	485 (0.1)	<10 (<0.1)	12 (<0.1)

Note: Patients may have been prescribed more than one class of medication and therefore the sum of the individual drug classes may be greater than the total in the psychotropic group.

Table 2 Hazard Ratios (HR) for **new** psychotropic prescription within 90 days of hospital discharge comparing ICU to non-ICU hospital survivors

	Number of new prescription/naïve critical care survivors (%; 95% CI)	Number of new prescription/naïve non-critical care survivors (%; 95% CI)	Unadjusted HR (95% CI)	Adjusted HR* (95% CI)
New psychotropic medication (any)	1610/15,609 (10.3; 9.8 – 10.8)	9743/307,429 (3.2; 3.1 – 3.2)	3.39 (3.22 – 3.57)	2.03 (1.91 – 2.16)
New antidepressant	1048/17,207 (6.1; 5.7 – 6.5)	7232/317,708 (2.3; 2.2 – 2.3)	2.73 (2.56 – 2.91)	1.86 (1.73 – 2.00)
New anxiolytic or hypnotic	1307/20,108 (6.5; 6.2 – 6.8)	6194/346,609 (1.8; 1.7 – 1.8)	3.74 (3.52 – 3.97)	2.18 (2.04 – 2.34)
New antipsychotic or mania drug	247/22,412 (1.1; 1.0 – 1.2)	1787/361,012 (0.5; 0.5 – 0.5)	2.23 (1.95 – 2.55)	1.22 (1.06 – 1.41)

*HR adjusted for sex, age group, ethnicity, deprivation, main condition at hospitalisation, index morbidity category, previous ED visits, and previous hospital admissions.

Conclusions

Critical care survivors have a higher risk of psychotropic prescriptions than hospitalised patients, with a significant proportion receiving benzodiazepines and other hypnotics. Future research should focus on the requirement for and safety of psychotropic medicines in survivors of critical illness, to help guide policy for clinical practice.