Routine clinical measures in a newly commissioned Psychiatric Intensive Care Unit (PICU): Predictors of favourable outcomes.

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Abstract

Aims

To describe clinical outcomes for patients admitted to our PICU and to identify and attempt to characterise those patients who did well on our specified clinical measures and those who remained unchanged or recorded worsening clinical measures.

Methods

This was a prospective study from February 2013 to April 2015. For all episodes of patient care, we recorded clinical and demographic variables. Objective assessments of illness severity were measured using the Clinical Global Impression scale (CGI), severity of psychotic symptoms using the Brief Psychiatric Rating Scale (BPRS) and the Zung self-rated depression scale.

Results

52 patients were admitted and discharged during this period. Using the CGI 66.7% of patients improved, using BPRS 74.3% improved and using Zung 72.7% improved. Higher admission CGI severity was associated with improvement according to CGI improvement and BPRS scores. No other variable was associated with improvement.

Discussion

The majority of patients improved, whether looking at objective or subjective measures, although unfortunately it is difficult to predict who will do well from demographic or clinical details. It is encouraging that most patients in our survey improved. We plan to use the results to further refine the measuring of clinical effectiveness outcomes of those patients requiring admission to PICU.

Key Words:
PICU, Outcome Measures, Clinical Global Improvement, Brief Psychiatric Rating Scale,

Introduction

There is increasing accountability for provision of psychiatric in-patient care. It is essential that we are able to demonstrate clinical effectiveness for such services. The development of Psychiatric Intensive Care Units (PICUs) in the United Kingdom from the 1970s helped the clinical management for more disturbed patients and this coincided with the overall reduction in psychiatric beds throughout the country. See Bowers, 2006[1] for comprehensive literature review on this area.

PICUs are generally more resource intensive[2] than their acute psychiatric admission counterparts and the need for outcome measures to demonstrate clinical effectiveness is pressing. Measures now considered important include patient safety and satisfaction; engagement; discharge planning; offending and social outcomes, as well as a range of clinical measures of symptom reduction. In this report we aim to describe selected clinical outcomes for patients admitted to our PICU. Our policy of care is in keeping with those set by the national association of psychiatric inpatient care units (NAPICU).[3] Our focus was to identify and attempt to characterise those patients who did well on our specified clinical measures and those who remained unchanged or recorded worsening clinical measures.

Methods

The six bedded Psychiatric Intensive Care Unit at Wishaw General Hospital was opened in February 2014 to provide dedicated and specialist nursing, medical and allied health professional care for patients in Lanarkshire, Scotland who could not be managed safely in local NHS Lanarkshire acute psychiatric admissions units.

NHS Lanarkshire comprises a population of 560,000, thus our PICU provision approximated to 1 bed for 100,000 people.

A specific protocol was devised by the multi-professional PICU team to guide local acute mental heath units in the referral pathway and admission criteria. Our PICU accepts referrals from NHS Lanarkshire acute psychiatric admissions units, Lanarkshire court referrals for assessment under the Criminal Procedure (Scotland) Act 1995 and referrals from forensic psychiatry colleagues for patient assessment under a secure environment. When necessary, the PICU also accepts admissions from acute psychiatric admissions unit out-with NHS Lanarkshire

Our routine clinical practice consists of collecting the following information: Demographic details, diagnoses (including comorbid diagnoses such as substance misuse disorders and physical comorbidity), objective assessment of illness severity and improvement according to the Clinical Global Impression scale (CGI)[4], severity of psychotic symptoms using the Brief Psychiatric Rating Scale (BPRS)[5] and the Zung self-rated depression scale.[6] BPRS and CGI scores were jointly rated by nursing and medical staff. The rationale for using such scales was their widespread recognition and their clinical utility and interpretation, particularly between CGI measures and BPRS.[7] Each of the rating scales was subdivided into those who improved (CGI improvement 1-3, BPRS-positive score, Zung-positive score) versus those who showed no change or worsening. We compared the characteristics of those improved versus no change or worsening. Parametric data was analysed using mean, 95%

confidence intervals and t-tests. Non-parametric categorical data was analysed using the χ^2 statistic.

Results

Table 1 shows the patients demographic and clinical features, subdivided into two patient groups; those that “improved,” and those that showed “no improvement,” as defined by rating scales as outlined below (BPRS, CGI and Zung). Totals for all patients are also shown. Within the period of time studied, there were 52 episodes of care, with approximately seven out of ten patients showing improvement using the three measures studied. This supports the position that the overall clinical improvement was seen with most patients during their stay in PICU. Like most other PICUs around the UK the majority of our patients of were male (71.2%) and suffered from schizophrenia or related psychotic disorder (61.5%) followed by affective disorder (19.2%).[1] Higher admission CGI illness severity score was associated with greater improvement in final CGI improvement score. There was some suggestion, although not statistically significant, that treatment with clozapine was associated with more favourable outcome on CGI and BPRS.

Table 2 shows the referral characteristics of patients who improved, remained the same or worsened according to routine clinical rating scales. The time of admission, whether out-with normal working hours or at the weekend was not associated with the outcomes measured. There was suggestive evidence, although not statistically significant, that longer duration of admission was associated with a more favourable outcome with the objective measures of CGI improvement and BPRS but not with subjective Zung rating.

Discussion

Our study showed that although most patients improved symptomatically after their treatment in PICU, a significant minority (25.7-33.3%) did not change or did not improve, depending on the particular rating scale used.

The objective rating scales used (BPRS and CGI) both showed improvement in the majority of patients (74.3% and 66.7% respectively) indicating the majority of patients had a favourable outcome from their stay in PICU. The BPRS shows more patients improving, perhaps reflecting the instruments greater sensitivity over a broader range of symptoms.It is not surprising that initial high CGI severity was associated with improvement as such patients had most to gain from admission (i.e. the most severely ill).

There was suggestive evidence that longer duration of admission was associated with a more favourable outcome with the objective measures of CGI improvement and BPRS but not with subjective Zung rating. The subjective nature of the Zung, and limited number of patients competing the tool (11 of 52), suggests limited utility in using this instrument for measuring outcomes in an PICU setting. The relatively small numbers collected for the Zung self rating score for depression do not allow meaningful statistical analysis as many individual cells were less than 5 in number.

In terms of BPRS symptom resolution, reduction in anxiety, hostility, suspiciousness and uncooperativeness improved over other BPRS items. Causality cannot necessarily be inferred from one set of variables to another. There was some concern over incomplete data, even for objective clinical measures (CGI and BPRS).

It is clear we should increase our efforts to collect all objective measures of improvement such as CGI and BPRS as well as encourage patients to complete self-rating scores for depression and other satisfaction surveys. This survey consisted of prospectively collected data as part of our vision for our new PICU.

It introduces the challenges in keeping up the momentum on routine collection of outcomes when clinical priorities with patients with often, long complex patient journeys come to the attention of staff.

There are some important limitations to this data set. There may confounders artificially reducing the initial observations by PICU staff, such as the effects of sedative medication given prior to transfer to the PICU causing an artificial reduction in severity scores. Additionally, some patients were so unwell initially (for example suffering mutism, catatonia or extreme guarded behaviour) which may not be accurately reflected in these tools. Such patients may become more overtly symptomatic during their recovery, paradoxically increasing their severity scores. There was also a small group of patients from neighbouring health boards who represented a transient population, whose discharge reflected bed availability rather than symptom improvement. This also applied to those awaiting transfer to conditions of higher security. Perhaps to overcome this limitation, objective severity scores could be applied by the referring team at the point of referral, in addition to PICU ratings on arrival. Furthermore, more frequent use of severity scores during a patient's admission (for example weekly) may better reflect the course of improvement.
Nursing and medical staff both participated in scoring BPRS and CGI ratings, with no guarantee that the same rater(s) was involved at admission and discharge, with potential for reduced inter-rater reliability.

In summary, the majority of patients improved, whether looking at objective or subjective measures, although unfortunately it is difficult to predict who will do well from demographic or clinical details. It is encouraging that most patients in our survey improved. We plan to use the results to further refine the measuring of clinical effectiveness outcomes of those patients requiring admission to PICU.

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