Optimising Sedation in Intensive Care

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Introduction

The Richmond Agitation-Sedation Score (RASS) assesses the level of sedation in critically ill patients (see table 1), and has been used in the RSCH ICU since November 2012. Maintaining optimum levels of sedation (RASS -2 to 0) improves clinical outcomes[1]. This audit assess the depth of sedation, and frequency of scoring of sedation depth in the RSCH ICU, and compares current practice with the practice audited four months previously.

RICHMOND AGITATION – SEDATION SCORE (RASS)		
+4	COMBATIVE	Combative, violent, immediate danger to staff
+3	VERY AGITATED	Pulls to remove tubes or catheters, aggressive
+2	AGITATED	Frequent non purposeful movement, fights ventilator
+1	RESTLESS	Anxious, apprehensive, movements not aggressive
0	ALERT & CALM	Spontaneously pays attention to caregiver
-1	DROWSY	Not fully alert but has sustained awakening to voice (eye opening & contact > 10 secs)
-2	LIGHT SEDATION	Briefly awakens to voice (eyes open & contact < 10 secs)
-3	MODERATE SEDATION	Movement or eye opening to voice (no eye contact)
-4	DEEP SEDATION	No response to voice but movement or eye opening to physical stimulation
-5	UNAROUSABLE	No response to voice or physical stimulation

Table 1: Richmond Agitation Sedation Score

Methods

Patients sedated and ventilated during July 2015 were audited. The audit was then repeated for November 2015. Patients were excluded if it was felt that reducing the level of sedation was inappropriate (PEEP > 10 cmH$_2$0, patients within 12 hours of returning from surgery, patients receiving neuromuscular blockade, patients in a prone position).

Reference

1. Barr JL, Fraser GL, Puntillo K, Ely EW. et al. Clinical practice guidelines for the management of pain, agitation, and delirium in adult patients in the intensive care unit. *Crit Care Med*. 2013 Jan;41(1):263-306.

Results

A total of 300 scores were obtained during July 2015 and 672 in November 2015.

Sedation scores were recorded regularly over the 24 hour periods.

Sedation scores were regularly recorded in both July and November, with peaks at 8am and 8pm (see graph 1).
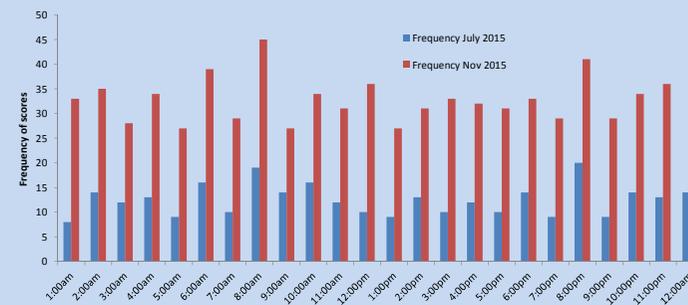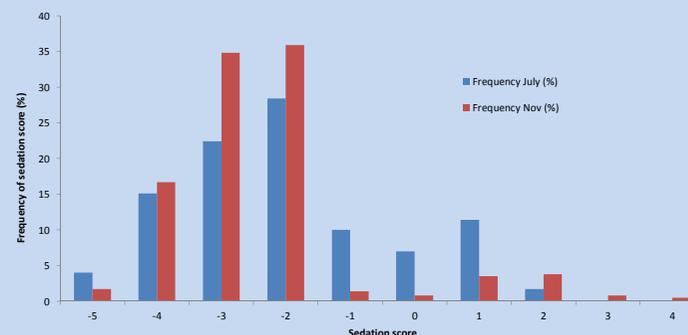
Graph 1: graph to show the times that sedation scores were assessed

The median sedation score was -2 in July and -3 in November (see graph 2).

45.5% were optimally sedated with a RASS score of -2 to 0 in July, with 41.5% too heavily sedated at -3 or below.

In November the proportion adequately sedated fell to 38.2% (-2 to 0) with a majority (53.3%) overly sedated (-3 or below).
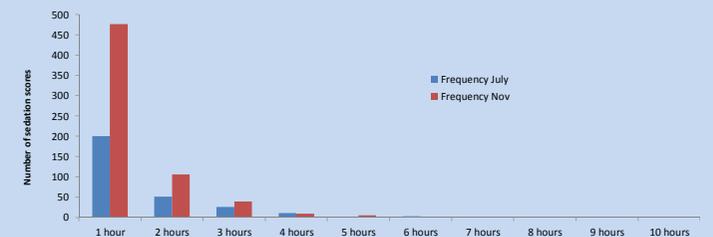
Graph 2: graph to show the frequency of each sedation score

Sedation scores remained consistent over the 24-hour period See graph 3).

Graph 3: graph to show average sedation scores during the 24h period

Most scores were recorded frequently (see graph 4). Occasionally, scores were recorded at 6 hour intervals or longer (8 in July and 4 in November).

Graph 4: graph to show frequency of scoring interval

Discussion

Sedation scores are being recorded frequently, with few long gaps for either month. Sedation protocols should be used in order to target the lowest possible levels of sedation. There should be discussion around whether targets should be different at night compared with daytime.

There has been no improvement in sedation practice in November compared with July 2015. Fewer than half (**45.5%**) of patients were sedated to optimum levels in July and this fell to **38.2%** in November. There may be merit in maintaining an infusion of the opioid, whilst reducing or stopping the hypnotic, rather than stopping both completely. Maintaining staff awareness of the benefits of optimising sedation is prudent.