

Appendix

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Table S1. TISS-28 score of nursing interventions¹

Interventions	Points
Basic Activities	
Standard monitoring (hourly vital signs, fluid balance)	5
Biochemical and microbiological investigations	1
Single medication (any route)	2
Multiple intravenous medications	3
Care and prevention of decubitus and daily dressing changes	1
Frequent dressing changes (at least one time per nursing shift)	1
Care of drains	3
Cardiovascular support	
Single vasoactive medication	3
Multiple vasoactive medications	4
Intravenous replacement of large fluid losses (>L/m ² /day)	4
Peripheral arterial catheter	5
Pulmonary artery flotation catheter	8
Central venous line	2
Cardiopulmonary resuscitation after arrest in the past 24 hours	3
Specific interventions	
Single specific interventions in the ICU (nasal or orotracheal intubation, cardioversion, introduction of pacemaker, endoscopies, emergency surgery in the past 24 hours)	3
Multiple specific interventions in the ICU (more than described above)	5
Specific interventions outside ICU (surgery or diagnostic procedures)	5
Ventilatory support	
Mechanical ventilation	5
Supplementary ventilation support (supplementary oxygen by any method except if mechanical ventilation parameters apply)	2
Care of artificial airways (endotracheal tube or tracheostoma)	1
Treatment of improving lung function (eg. Thorax physiotherapy, incentive spirometry, inhalation therapy, intratracheal suctioning)	1
Renal support	
Hemofiltration/dialytic techniques	3
Quantitative urine output measurement	2
Active diuresis (eg. Furosemide >0.5mg/Kg/day)	3
Neurologic support	
Measurement of intracranial pressure	4
Metabolic support	
Treatment of complicated metabolic acidosis/alkalosis	4
Intravenous alimentation	3
Enteral feeding through gastric tube or other route (eg. Jejunostomy)	2
<p>Total TISS score (<i>Addition of all points in index</i>): Interpretation of workload summary: Class 1 <10 points = ICU not required, Class 2:10-19 points=1:2 nurse to patient ratio, Class 3:20-39 points= >1:2 nurse patient ratio, Class 4:>40 points 1:1 nurse to patient ratio, ICU discharge possible < 16 points ^{2,3,4,5}</p>	

Table S2: Pharmacological management of patients across study period

Drug class	Day prior to study N (%)	Day of study N (%)	Day after study N (%)
ACE-All inhibitors	2 (7)	3 (11)	4 (14)
Alpha agonists	2 (7)	2 (7)	5 (18)
Anti-emetics	5 (18)	5 (18)	5 (18)
Antiarrhythmics	1 (4)	2 (7)	2 (7)
Antibiotics	15 (54)	15 (54)	15 (54)
Anticoagulants	16 (57)	15 (54)	16 (57)
Anticonvulsant	8 (29)	9 (32)	7 (25)
Antidepressants	3 (11)	3 (11)	2 (7)
Antihypertensives	6 (21)	9 (3.56)	7 (25)
Aspirin	1 (4)	4 (14)	4 (14)
Benzodiazepines	6 (21)	4 (14)	4 (14)
Beta blockers	4 (14)	5 (19)	4 (14)
Bronchodilators	4 (14)	5 (19)	4 (14)
Diabetic Medications	7 (25)	7 (25)	5 (19)
Diuretics	6 (21)	7 (25)	7 (25)
Fluids, blood product	4 (14)	5 (19)	6 (21)
Fluids, crystalloid	26 (93)	24 (86)	24 (86)
IV general anaesthetic	18 (64)	16 (57)	11 (39)
Inotropes	13 (46)	9 (32)	8 (29)
Lipid lowering	2 (7)	2 (7)	0 (0)
Major Tranquilisers	1 (4)	0 (0)	1 (4)
Nutrition, enteral	14 (50)	19 (68)	17 (61)
Nutrition, TPN	0 (0)	3 (11)	2 (7)
Narcotics	18 (64)	16 (57)	14 (50)
Nicotine	3 (11)	3 (11)	3 (11)
Other immunosuppression	1 (4)	1 (4)	1 (4)
Other medications	16 (57)	20 (71)	21 (75)
Paracetamol	19 (68)	18 (64)	17 (61)
Proton Pump Inhibitors	13 (46)	13 (46)	10 (36)
Systemic Corticosteroids	7 (25)	6 (21)	5 (18)
Vasopressor	0 (0)	1 (4)	1 (4)

Table S3. Logistic Regression for Associations of CBT Rhythmicity Day of Environmental Monitoring

Univariate Models	OR (95% CI)	P
TISS score day of study	1.08 (0.95-1.23)	0.211
APACHE score		
ICU admission	1.03 (0.93-1.13)	0.579
Day of study	0.96 (0.84-1.09)	0.492
SOFA score		
ICU admission	1.08 (0.88-1.32)	0.472
Day of study	0.95 (0.72-1.24)	0.693
Charlson Comorbidity score		
Count	0.90 (0.46-1.78)	0.772
Sum	0.97 (0.60-1.58)	0.902
Type of ICU admission		
Surgical	2.75 (0.38-19.67)	0.314
Trauma	4.88 (0.68-34.96)	0.114
Number of drug classes per patient at ICU discharge	1.12 (0.89-1.41)	0.327
Sound intensity		
Average of Mean	0.95 (0.81-1.16)	0.544
Average of Max	0.90 (0.77-1.06)	0.205
Average of Min	1.01 (0.93-1.09)	0.783
Time Sound Intensity > 60 dB	1.00 (1.00-1.00)	0.597
Temperature		
Average of Mean	1.50 (0.63-3.56)	0.358
Average of Max	1.47 (0.63-3.41)	0.367
Average of Min	1.50 (0.62-3.62)	0.370
Relative humidity		
Average of Mean	1.00 (0.94-1.07)	0.891
Average of Max	1.00 (0.94-1.06)	0.907
Average of Min	1.01 (0.94-1.07)	0.871
Light intensity		
Average of Mean	0.99 (0.91-1.09)	0.912
Average of Max	1.01 (0.97-1.06)	0.562
Average of Min	0.97 (0.80-1.19)	0.765
Multiple regression		
TISS score day of study	0.92 (0.77-1.12)	0.416
Sound intensity average of maximum recorded	0.87 (0.72-1.05)	0.151
Type of ICU admission		
Surgical	1.00	
Trauma	6.83 (0.37-127.49)	0.198
Hosmer-Lemeshow goodness of fit Chi2=9.67 P=0.2886 Area under ROC curve = 0.7500		

References

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