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Risk factors for worsened quality of life in patients on mechanical ventilation. A prospective multicenter study

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Abstract
Objective: To identify risk factors for worsened quality of life (QoL) and activities of daily living (ADL) at 3 and 12 months after discharge from the Intensive Care Unit (ICU) in patients on mechanical ventilation (MV).
Design: A prospective, multicentric observational study was made.
Setting: Three ICUs in Argentina.
Patients: The study included a total of 84 out of 129 mainly clinical patients admitted between 2011–2012 and requiring over 24 hours of MV.
Interventions: No interventions were carried out.
Variables: Quality of life was assessed with the EQ-5D (version for Argentina), and ADL with the Barthel index.
Results: The EQ-5D and Barthel scores were assessed upon admission to the ICU (baseline) and after three months and one year of follow-up. Comorbidities, delirium, ICU acquired weakness (ICUAW), and medication received were daily assessed during ICU stay. The baseline QoL of the global sample showed a median index of [0.831 (IQR25–75% 0.527–0.931)], versus [0.513 (IQR0.245–0.838)] after three months and [0.850 (IQR0.573–1.00)] after one year. Significant differences were observed compared with QoL in the Argentinean general population

[mean 0.880 (CI 0.872–0.888), $p < 0.001$; $p < 0.001$; $p0.002$]. Individual analysis showed that 67% of the patients had worsened their QoL at three months, while 33% had recovered their QoL.

In the multivariate analysis, the variables found to be independent predictors of worsened QoL were a hospital stay $\geq$21 days [OR 12.57 (2.75–57.47)], age $\geq$50 years [OR 5.61 (1.27–24.83)], previous poor QoL [OR 0.11 (0.02–0.54)] and persistent ICUAW [OR 8.32 (1.22–56.74)]. Similar results were found for the worsening of ADL.

Conclusions: Quality of life is altered after critical illness, and its recovery is gradual over time. Age, length of hospital stay, previous QoL and persistent ICUAW seem to be risk factors for worsened QoL.

PALABRAS CLAVE
Calidad de vida relacionada a la salud;
Cuidado intensivo;
Ventilación mecánica;
Seguimiento;
Factores de riesgo

Factores de riesgo relacionados al empeoramiento de la calidad de vida (QOL) en pacientes que recibieron ventilación mecánica. Estudio prospectivo multicéntrico

Resumen
Objetivo: Identificar los factores de riesgo relacionados con el empeoramiento de la QOL y actividades de la vida diaria (AVD) a los 3 meses y al año del alta de la unidad de cuidados intensivos (ICU) en pacientes que recibieron ventilación mecánica (VM).
Diseño: Prospectivo, observacional.
Ámbito: Tres UCI en Argentina.
Pacientes: Se incluyó a 84 de 129 pacientes, predominantemente clínicos, que habían sido ingresados en las UCI entre 2011 y 2012 con > 24 h de VM.
Intervenciones: Ninguna.
Variables: La QOL fue evaluada a través del EQ-5D (versión argentina) y las AVD con el índice de Barthel.
Resultados: El EQ-5D y el índice de Barthel se evaluaron al ingreso a ICU, a los 3 meses y al año de seguimiento. Las comorbilidades, el delirio, la debilidad adquirida en UCI y los fármacos recibidos fueron evaluados diariamente. La QOL basal de toda la muestra exhibió una mediana del índice (0,831 [IQR: 0,527-0,931]), a los 3 meses (0,513 [IQR: 0,245-0,838]) y al año (0,850 [IQR: 0,573-1]) y mostró una diferencia significativa con la QOL de la población general argentina (0,880 (0,872-0,888) $p < 0,001$; $p < 0,001$; $p = 0,002$]. El análisis individual evidenció que el 67% de los pacientes había empeorado su QOL a los 3 meses mientras que el 33% la había recuperado.

En al análisis multivariado, las variables que probaron ser predictores independientes de empeoramiento de QOL fueron estadía hospitalaria $\geq$ 21 días (OR: 12,57 [2,75-57,47]), edad $\geq$ 50 años (OR: 5,61 [1,27-24,83]), baja QOL previa (OR: 0,11 [0,02-0,54]), y debilidad adquirida en UCI persistente (OR: 8,32 [1,22-56,74]). Resultados similares se observaron en el empeoramiento de AVD.
Conclusiones: La QOL está alterada tras la enfermedad crítica y su recuperación es gradual en el tiempo. La edad, estadía hospitalaria, QOL previa y debilidad adquirida en UCI persistente parecen ser factores de riesgo que tienden a empeorar la QOL.

Introduction

Twenty eight percent of the patients who are admitted to ICU (intensive care unit = ICU) with mechanical ventilation requirement (mechanical ventilation = MV) die during their stay at intensive care unit.[1] Survivors experienced deterioration in their QOL (quality of life = QOL) and functionality due to physical, psychological and neurocognitive dysfunctions, which in many cases, remain after 5 years of hospital discharge.[2,3] These disorders cause that about 50% of patients are unable to return to their previous activities after a year of having been discharged from hospital[4]; only 13% return to their regular jobs and most of them retire after 5 years.[5] Psychological disorders also affect the relatives of the patients admitted to ICU and last over post ICU period.[6] In turn, an economic impact is generated, which although heterogeneously studied, is certainly relevant in the post ICU scenario.[7] However, studies on selected populations in which QOL return to pre-admission values after 6–9 months have been published.[8]

There are few published data about QOL after critical illness in Argentina[9,10] but they seem to be similar to those in developed countries.[11,12] Different risk factors for QOL worsening after intensive care unit therapy that varies according