

ORIGINAL ARTICLE

Time of elevation of head of bed for patients receiving mechanical ventilation and its related factors[☆]



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KEYWORDS

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Abstract

Introduction: The semirecumbent position is a widespread recommendation for the prevention of pneumonia associated with mechanical ventilation.

Aims: To identify the time of elevation of head of bed for patients under mechanical ventilation and the factors related to such elevation in an intensive care unit.

Materials and methods: An observational, descriptive cross-sectional study. Conducted in an intensive care unit of a tertiary hospital from April to June 2015. The studied population were mechanically ventilated patients. Daily hours in which patients remained with the head of the bed elevated ($\geq 30^\circ$), socio-demographic data and clinical variables were recorded.

Results: 261 head elevation measurements were collected. The average daily hours that patients remained at $\geq 30^\circ$ was 16h28' (SD \pm 5h38'), equivalent to 68.6% (SD \pm 23.5%) of the day. Factors related to elevations $\geq 30^\circ$ for longer were: enteral nutrition, levels of deep sedation, cardiac and neurocritical diagnostics. Factors that hindered the position were: sedation levels for agitation and abdominal pathologies. Sex, age and ventilation mode did not show a significant relationship with bed head elevation.

Conclusions: Although raising the head of the bed is an easy to perform, economical and measurable preventive measure, its compliance is low due to specific factors specific related to the patient's clinical condition. Using innovations such as continuous measurement of the head position helps to evaluate clinical practice and allows to carry out improvement actions whose impact is beneficial to the patient.

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PALABRAS CLAVE

Guías de práctica clínica;
Unidad de Cuidados Intensivos;
Posicionamiento del paciente;
Prevención y control;
Neumonía asociada a ventilación mecánica

Tiempo de elevación del cabezal de la cama del paciente con ventilación mecánica y factores relacionados

Resumen

Introducción: La posición semiincorporada es una recomendación generalizada para la prevención de la neumonía asociada a ventilación mecánica.

Objetivo: Identificar el tiempo de elevación de la cabecera de la cama del paciente sometido a ventilación mecánica y los factores del paciente relacionados con dicha elevación en una unidad de cuidados intensivos.

Material y métodos: Estudio observacional, descriptivo y transversal. Realizado en una unidad de cuidados intensivos en hospital terciario, entre abril y junio de 2015. La población estudiada fueron pacientes con ventilación mecánica. Se registraron las horas diarias que los pacientes permanecían con el cabezal elevado ($\geq 30^\circ$), datos sociodemográficos y variables clínicas.

Resultados: Se recogieron 261 mediciones de elevación de cabezal. La media de horas diarias en que los pacientes permanecieron a $\geq 30^\circ$ fue de 16h28' (DE \pm 5h38'), equivalente al 68,6% (DE \pm 23,5%) del día. Factores relacionados a elevaciones $\geq 30^\circ$ durante más tiempo fueron: llevar nutrición enteral, niveles de sedación profunda, diagnósticos cardíacos y neurocríticos. Factores que dificultaban la posición fueron: niveles de sedación de agitación y patologías abdominales. Sexo, edad y modalidad ventilatoria no obtuvieron relación significativa en elevaciones de cabezal.

Conclusiones: A pesar de que elevar el cabezal es una medida preventiva fácil de realizar, económica y medible, su cumplimiento es bajo, existiendo factores específicos del estado clínico del paciente relacionados con dicho cumplimiento. Utilizar innovaciones como la medición continua de la posición del cabezal ayuda a evaluar la práctica clínica y permite llevar a cabo acciones de mejora cuyo impacto sea beneficioso para el paciente.

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What is known/what is the contribution of this?

PAMV is the ICU-acquired infection that has the highest rate of morbimortality. The semirecumbent position is a preventative measure against PAMV that is economical, easy to perform and measurable. Nevertheless, there is a low rate of compliance with this measure, which is recommended by national and international bodies. This work adds to the knowledge of healthcare staff on the factors related with raising the head of the bed of mechanically ventilated patients, describing the level of compliance based on national and international recommendations.

Implications of the study

To identify compliance or failure to comply with the widespread recommendation to raise the head of the bed in case of mechanically ventilated patients, as well as associated factors, will make it possible to

evaluate this practice and gain more in-depth knowledge of the phenomenon, while also establishing measures to improve it. This study also applies a new measurement methodology which takes the time the head is raised into account, increasing its accuracy regarding what is actually done with patients. Based on this study, it is also possible to detect the need for training or to increase knowledge about the specific preventative measures used in critical patient care.

Introduction

Pneumonia associated with mechanical ventilation (PAMV) is the second most common hospital infection after urinary tract infection caused by the bladder catheter,^{1,2} and it is the most severe of the infectious complications that patients admitted to an intensive care unit (ICU) may suffer.³⁻⁵

Different scientific associations, groups of experts and healthcare agencies have analysed the methods that have proven to be effective in preventing the appearance of PAMV, and they have drawn up recommendations based on this^{2,6-8}

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