



## POINT OF VIEW

### Reducing the use of physical restraints, a pending and emerging matter at the ICU<sup>☆</sup>



### La reducción del uso de contenciones mecánicas, una asignatura pendiente y emergente en las UCI

M. Acevedo-Nuevo<sup>a,b,c</sup>, G. Via-Clavero<sup>c,d,e,\*</sup>, on behalf of the Grupo de Trabajo Analgesia, Sedación, Contenciones y Delirio de la Sociedad Española de Enfermería Intensiva y Unidades Coronarias

<sup>a</sup> Hospital Universitario Puerta de Hierro, Majadahonda, Madrid, Spain

<sup>b</sup> Universidad Autónoma de Madrid, Madrid, Spain

<sup>c</sup> Grupo de Trabajo Analgesia, Sedación, Contenciones y Delirio de la Sociedad Española de Enfermería Intensiva y Unidades Coronarias, Madrid, Spain

<sup>d</sup> Hospital Universitari de Bellvitge, L'Hospitalet de Llobregat, Barcelona, Spain

<sup>e</sup> Escuela Universitaria de Enfermería, Facultad de Medicina y Ciencias de la Salud, Universidad de Barcelona, Grup de Recerca Infermera (GRIN), Institut d'Investigació Biomèdica de Bellvitge (IDIBELL), Barcelona, Spain

Received 25 July 2018; accepted 4 September 2018

Available online 2 May 2019

Physical restraint (PR) applied to the wrists or ankles, or using mitts or belts, is common practice in the Intensive Care Unit (ICU), and seeks to limit movement of the body or part of the body of the patient. In intensive care, PR is particularly used in patients subjected to mechanical ventilation or who suffer agitation of hyperactive delirium, in order to avoid self-extubation or removal of other life support devices.<sup>1,2</sup>

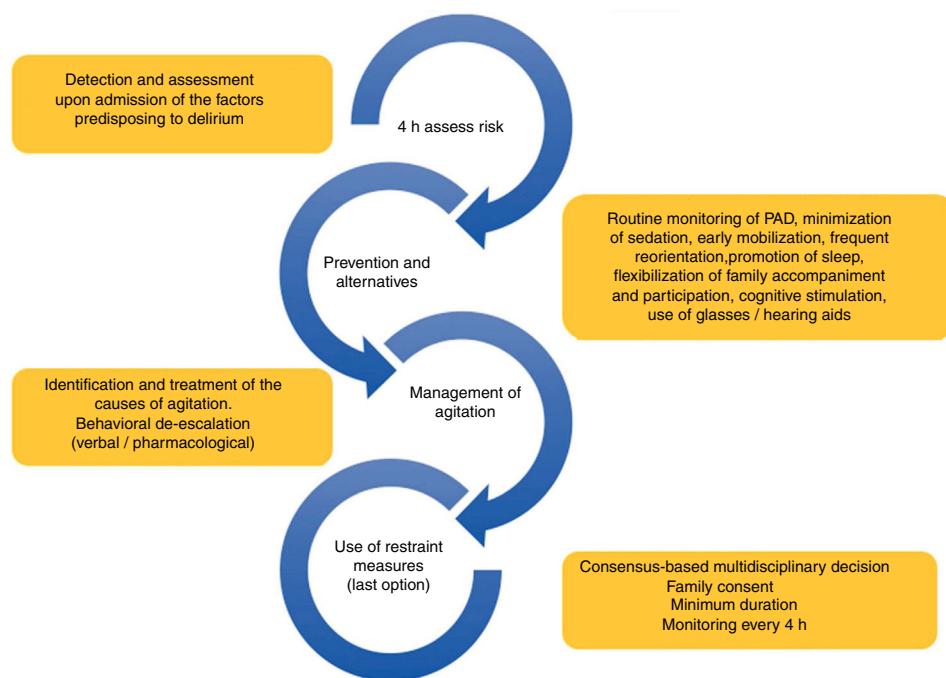
In late 2017, *Intensive Care Medicine*, as the official journal of the European Society of Intensive Care Medicine, published an article entitled: *Physical restraint: Time to let go*, in which the authors encouraged readers to reflect upon the use of PR in critical patients, and positioned themselves against such practices.<sup>3</sup> More recently, the new guides on the management of pain, sedation/agitation, delirium, immobilization and sleep (PADIS guides) have underscored the need for randomized clinical trials to assess the true effects of PR upon patient clinical outcomes.<sup>4</sup>

To date, the few studies that have focused on the use of PR in the ICU have reported high and notoriously variable prevalences from one country to another, and even between hospitals in one same country,<sup>1,5</sup> though the criteria used to measure prevalence are heterogeneous – a fact that makes comparisons difficult. What does seem clear, however, is that PR is common practice in most countries, with the exception

<sup>☆</sup> Please cite this article as: Acevedo-Nuevo M, Via-Clavero G, en nombre del Grupo de Trabajo Analgesia, Sedación, Contenciones y Delirio de la Sociedad Española de Enfermería Intensiva y Unidades Coronarias. La reducción del uso de contenciones mecánicas, una asignatura pendiente y emergente en las UCI. *Med Intensiva*. 2019;43:299–301.

\* Corresponding author.

E-mail address: [gviac@ub.edu](mailto:gviac@ub.edu) (G. Via-Clavero).



**Figure 1** Reflective model on the use of physical restraint measures.

PAD: pain/agitation/delirium.

Adapted from Via-Clavero et al. Ethical-legal and clinical considerations on the use of restraining measures. Official College of Nurses of Barcelona (*Col·legi Oficial d'Infermeres i Infermers de Barcelona* [COIB]). Pending publication.

of the United Kingdom and in northern Europe. In contrast, Spain appears to be one of the countries in which PR is most widely used.<sup>5-7</sup>

On examining the evidence on the use of PR in critical patients, most studies agree that its effectiveness in avoiding falls or in preventing patient self-removal of devices is uncertain and inconclusive. Indeed, PR has even been reported to induce such self-removal, possibly mediated by increased patient agitation caused by the use of PR.<sup>8</sup> Acknowledging the limitations of many of these studies, at present we are only able to conclude that PR has not been shown to significantly reduce the incidence of patient self-removal of devices in the ICU, while in contrast the use of such measures of restraint has been found to predispose to increased patient agitation and risk of delirium. The benefits and safety of PR is therefore widely questioned.<sup>9</sup>

From the professional responsibility perspective, the avoidance of PR should be mandatory, with the purpose of affording "good care" in which psychological, emotional and ethical management is placed on a par with physical care. In addition to limiting autonomy, using PR places the patient in a situation of increased vulnerability. Unfortunately, current legislation – derived from other general laws such as those referred to informed consent or contexts as different as mental health or the sociosanitary setting – is not clear when it comes to defining the position to be taken in contexts as dynamic and variable as those found in the ICU. It seems clear that the adoption of restraining measures must be guided by the principles of good medical practice; provided all verbal, relational and pharmacological alternatives have been exhausted; and conditioned to the obtainment of consent from the patient (or family, when

the former is unable to give consent). In any case, the decision always must be made on a team consensus basis.

Many studies indicate that one of the main reasons for using PR is to control disruptive or "uncooperative" behavior on the part of the patient. However, these studies offer no in-depth analysis of the possible causes of such behavior, e.g., pain or delirium, and simply label all these manifestations as corresponding to an "agitated patient".<sup>10</sup> This lack of analysis may be a consequence of failure to recognize the use of PR as a multifactorial and highly complex phenomenon. In this respect, qualitative studies published in recent years offer an in-depth exploration of the opinions and beliefs regarding the factors both against and in favor of the use of PR, particularly the prevention and management of pain, agitation and delirium within the Units, as influencing factors.<sup>11,12</sup> These studies show PR to be a shared responsibility within the care team, in which each professional plays a key role. The most current theoretical models, such as eCash, coincide that the use of PR must be tied to patient wellbeing in the ICU, and that the prevention, monitoring and treatment (whether pharmacological or otherwise) of pain, agitation and delirium, such as multimodal analgesia, dexmedetomidine, early mobilization, respect for sleep, and family accompaniment, are interdisciplinary issues that require joint effort.<sup>13</sup>

Another frequent claim is the need to relate work load and the nurse-to-patient ratio to the use of PR. However, this argument likewise does not appear to stand up to the evidence, since the use of PR remains common in Units with a ratio of 1:1,<sup>1</sup> and although it is true that the ratios should be adjusted to the work load, this solution nowadays is neither realistic nor feasible. What does seem clear is

that continuous vigilance and accompaniment at the patient bedside would contribute to avoid the need for PR. In this regard a fundamental requirement is the commitment of organizations to policies of change designed to promote accompaniment by the family and shared and reflective decision making by all the members of the team. The approach to minimizing PR in the ICU should be a multicomponent initiative adapted to each organization and focused on the reality of each center, with the purpose of creating a new "culture of care" (Fig. 1).

The proposals made by both the Analgesia, Sedation, Restraint and Delirium Working Group of the Spanish Society of Nursing in Intensive Care and Coronary Units (*Sociedad Española de Enfermería Intensiva y Unidades Coronarias* [SEEIUC]) and the Sedation, Analgesia and Delirium Working Group of the Spanish Society of Intensive and Critical Care Medicine and Coronary Units (*Sociedad Española de Medicina Intensiva, Crítica y Unidades Coronarias* [SEMICYUC]) comprise a joint approach to these problems, integrating the use of PR with aspects related to pain, agitation and delirium, and advocate an interdisciplinary perspective.<sup>14</sup> In this regard, the "do not do" recommendations of the Sedation, Analgesia and Delirium Working Group of the SEMICYUC specifically contemplate the avoidance of PR as a delirium preventive measure.<sup>15</sup> Likewise, the Analgesia, Sedation, Restraint and Delirium Working Group is obtaining real data from multicenter studies in our setting on the management of pain, agitation and delirium, factors related to the use of PR and patient self-removal of devices, and information referred to the suitability of use of PR (prescription, registry, written informed consent, duration of the measure, etc.) in order to allow comparisons to be made in our context, as well as to establish cautious extrapolations referred to the international setting.

It seems that the challenge of reflection and progress toward PR-free critical care has finally been accepted. However, in order for such progress to be adequate, we need to acknowledge our reality and difficulties, open our perspective and ask research questions referred to more reflective and inclusive strategies, with innovative and interdisciplinary initiatives in which institutional implication is also present. Only in this way can we advance from the current position on the adequate management of PR as a pending and emerging matter in the ICU.

## Conflicts of interest

The authors declare that they have no conflicts of interest.

## References

- Rose L, Burry L, Mallick R, Luk E, Cook D, Fergusson D, et al. Prevalence, risk factors, and outcomes associated with physical restraint use in mechanically ventilated adults. *J Crit Care.* 2015;31:31–5.
- Maccioli GA, Dorman T, Brown BR, Mazuski JE, McLean BA, Kuszaj JM, et al. Clinical practice guidelines for the maintenance of patient physical safety in the intensive care unit: Use of restraining therapies – American College of Critical Care Medicine Task Force 2001–2002. *Crit Care Med.* 2003;31:2665–76.
- Burry L, Rose L, Ricou B. Physical restraint: time to let go. *Intensive Care Med.* 2018;44:1296–8.
- Devlin JW, Skrobik Y, Gélinas C, Needham DM, Slooter AJC, Pandharipande PP, et al. Clinical Practice Guidelines for the prevention and management of pain, agitation/sedation, delirium, immobility, and sleep disruption in adult patients in the ICU. *Crit Care Med.* 2018;46:e825–73.
- Benbenishty J, Adam S, Endacott R. Physical restraint use in intensive care units across Europe: the PRICE study. *Intensive Crit Care Nurs.* 2010;26:241–5.
- Martín Iglesias V, Pontón Soriano C, Quintián Guerra MT, Velasco Sanz TR, Merino Martínez MR, Simón García MJ, et al. Contención mecánica: su uso en cuidados intensivos. *Enferm Intensiva.* 2012;23:164–70.
- Pérez de Ciriza Amatriain AI, Nicolás Olmedo A, Goñi Viguria R, Regaira Martínez E, Margall Coscojuela MA, Asiain Erro MC. Restricciones físicas en UCI, su utilización y percepción de pacientes y familiares. *Enferm Intensiva.* 2012;23:77–86.
- Ai ZP, Gao XL, Zhao XL. Factors associated with unplanned extubation in the Intensive Care Unit for adult patients: a systematic review and meta-analysis. *Intensive Crit Care Nurs.* 2018;47:62–8.
- Mehta S, Cook D, Devlin JW, Skrobik Y, Meade M, Fergusson D, et al. Prevalence, risk factors, and outcomes of delirium in mechanically ventilated adults. *Crit Care Med.* 2015;43:557–66.
- Freeman S, Yorke J, Dark P. Patient agitation and its management in adult critical care: a systematic review and narrative synthesis. *J Clin Nurs.* 2018;27:e1284–308, <http://dx.doi.org/10.1111/jocn.14258>.
- Acevedo-Nuevo M, González-Gil MT, Solís-Muñoz M, Láiz-Diez N, Toriño-Olivera MJ, Carrasco-Rodríguez-Rey LF, et al. Manejo de la inmovilización terapéutica en Unidades de Cuidados Críticos: aproximación fenomenológica a la realidad enfermera. *Enferm Intensiva.* 2016;27:62–74.
- Via-Clavero G, Sanjuán-Naváis M, Romero-García M, de la Cueva-Ariza L, Martínez-Estalella G, Plata-Menchaca E, et al. Eliciting critical care nurses' beliefs regarding physical restraint use. *Nurs Ethics.* 2018, <http://dx.doi.org/10.1177/0969733017752547> [in press].
- Vincent JL, Shehabi Y, Walsh TS, Pandharipande PP, Ball JA, Spronk P, et al. Comfort and patient-centred care without excessive sedation: the eCASH concept. *Intensive Care Med.* 2016;42:962–71.
- Hernández-Tejedor A, Peñuelas O, Sirgo-Rodríguez G, Llompарт-Pou J, Palencia-Herrejón E, Estella A, et al. Recomendaciones para el tratamiento de los pacientes críticos de los Grupos de Trabajo de la Sociedad Española de Medicina Intensiva Crítica y Unidades Coronarias (SEMICYUC). *Med Intensiva.* 2017;41:285–305.
- González de Molina Ortiz FJ, Gordo Vidal F, Estella García A, Morrondo Valdeolmillos P, Fernández Ortega JF, Caballero López J, et al. Recomendaciones de «no hacer» en el tratamiento de los pacientes críticos de los grupos de trabajo de la Sociedad Española de Medicina Intensiva, Crítica y Unidades Coronarias (SEMICYUC). *Med Intensiva.* 2018;42:425–43, <http://dx.doi.org/10.1016/j.medin.2018.04.001>.