

Appendix 1. Early mobilization protocol

Early mobilization consists of a set of planned movements that aim to help patients recover the physical functional status they had before admission to the ICU. These movements progress from passive mobilizations (when the patient cannot collaborate), to postural changes (active and passive), to active mobilizations (the patient collaborates with resistance and/or active exercises), to sitting in bed, to trunk control exercises (sitting on the edge of the bed), to standing, to transfer to the chair (active or passive), and finally to walking (with more or less assistance). Each activity requires the participation of physiotherapists, intensivists, nurses, nursing assistants, and caregivers. From Monday to Friday, a physiotherapist carries out a daily session. Attending physicians determine whether patients meet the inclusion criteria and the criteria for clinical stability (Table 1) 24 hours after admission. If the patient does not meet the criteria for clinical stability, their readiness for early mobilization is reassessed every 24 hours. Early mobilization was interrupted if adverse events occurred (Table 2), and patients were reassessed 24 hours later.

Table 1. Criteria for clinical stability

Hemodynamic:

MAP>65mmHg +/- norepinephrine <0.2mcg/kg/min and/or dobutamine <8mcg/kg/min

Respiratory:

PaFiO₂ >200 with FiO₂<50% and PEEP <12

Neurological:

Richmond Agitation-Sedation Scale (RASS) < +1

Infectious:

Body temperature>38.3°C

MAP: mean arterial pressure, PaO₂: partial pressure arterial oxygen, FiO₂: fraction of inspired oxygen,

PEEP: positive end-expiratory pressure

Table 2. Adverse events requiring interruption of early mobilization

Hemodynamics:

MAP< 65 mmHg or >100 mmHg +/- norepinephrine >0.2mcg/kg/min and/or dobutamine >8mcg/kg/min

SBP>200 mmHg

HR<40 bpm or >130 bpm

Respiratory

RR<5 or >40 breaths/minute

SaO₂ <88%

PaFiO₂ <200

Sick mismatch of the respirator

Neurological

Agitation requiring medication

Infectious

Body temperature>38.3°C

MAP: median arterial pressure, SBP: systolic blood pressure, HR: heart rate, RR: respiratory rate, SaO₂

oxygen saturation, PaO₂ partial pressure arterial oxygen, FiO₂ fraction of inspired oxygen

Before the mobilization, the nurse responsible assesses and monitors the patient's hemodynamic status; assesses pain using the EVA and/or CAMPBELL scale, and administers analgesia if necessary; assesses respiratory function (increasing oxygen supply during ambulation, aspirating secretions prior to mobilization, and adjusting the parameters of the portable ventilator according to the patient's needs); ensures safety precautions are taken (appropriate footwear, wheelchair ...); monitors the function of the devices; and ensures the patient has optimal rest.

Table 3. Mobilization levels in the early mobilization protocol

LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
Unconscious	Conscious	Conscious	Conscious	Conscious
Passive mobilizations of the limbs. Postural changes c / 4h. Sitting in bed (chair position, 70°).	<i>Idem level 1</i> Active-assisted and active limb exercise	<i>Idem level 2</i> Active-assisted, active and against limb resistance exercises. Trunk control exercises.	<i>Idem level 3</i> Introduction to daily life activities.	<i>Idem level 4</i> Standing training. Walking 2 times a day. Carrying out daily life activities.
Objective: - Clinical stability. - Sedation withdrawal.	Objective: - Active movements of the upper limbs against gravity.	Objective: - Increased trunk strength. - Move the lower limbs against gravity. - Preparation to tolerate body weight.	Objective: - Body weight tolerance. - Sitting in the chair. - Carrying out some activities of daily life.	Objective: - Deambulation. - Autonomy in carrying out the activities of daily life.

Annex 2. Data Collection sheet.

* Hora 17/12/2019 11:49

FISIOTERAPEUTA.	<input type="text"/>
FISIOTERAPEUTA Altres	<input type="text"/>
Inici protocol MP	<input type="text"/>
Nivell protocol MP	<input type="text"/>
Escala Força Ms MRC	<input type="text"/> 0-60 punts
Manchester Mobility Score	<input type="text"/>
Manchester Mobility Score (I)	<input type="text"/>
M.M.S_Unwell_Cause	<input type="text"/>
CINESITERAPIA	
Mobilitzacions passives	<input type="checkbox"/>
Mobilitzacions actiu/assistida	<input type="checkbox"/>
Exercicis Actius	<input type="checkbox"/>
TRANSFERÈNCIES	
Exercicis control tronc	<input type="checkbox"/>
Sedestació llit	<input type="checkbox"/>
Bipedestació	<input type="checkbox"/>
Tipus de bipedestació	<input type="text"/>
Temps bipedestació (minuts)	<input type="text"/>
Cicloergòmetre	<input type="checkbox"/>
Temps cicloergòmetre (minuts)	<input type="text"/>
Transferència llit-silló	<input type="text"/>
Deambulació.	<input type="text"/>
Distància recorreguda	<input type="text"/> metres
Events adversos MP	<input type="text"/>
Viabilitat	<input type="text"/>

The physiotherapist will be in charge of filling in all the information for each patient every day

Translation: Fisioterapeuta - Physiotherapist; Fisioterapeuta Altres - Other physiotherapists; Inici protocol MP - Start early mobilization protocol; Nivell Protocol MP - Early mobilization protocol level; Escala força Ms MRC – Medical Research Council muscle scale; Cinesiterapia - Kinesitherapy; Mobilitzacions passives - Passive mobilizations; Mobilitzacions actiu/assistida - Active/assisted mobilizations; Exercicis actius - Active exercises; Transfèrencies -Transfers; Exercicis control de tronc - Trunk control exercises; Sedestació llit - Sitting in bed; Bipedestació - Standing; Tipus de bipedestació - Type of standing; Temps bipedestació (minuts) - Time standing (minutes); Cicloergòmetre - Cycle ergometer; Temps cicloergòmetre (minuts) - Time on cycle ergometer (minutes); Transferència llit-silló - Transfer bed-chair; Demabulació - Walking; Distància recorreguda (metres) - Distance walked (meters); Events adversos MP - Adverse events during early mobilization; Viabilitat – Viability.