

The early mobilization for children in Pediatric Intensive Care

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The definition of early mobilization (EM) in pediatrics is recent¹. “EM was defined as the implementation of therapeutic interventions aimed at patients within 72h of their Pediatric Intensive Care (PICU) stay, including those patients on positive pressure and mechanical ventilation”. However, to affirm that EM is a set of interventions to promote walking may not be adequate for pediatrics, since the age range of admission to PICU usually varies from 1 month to 17 years of age, and ambulation is not the ultimate goal for infants, for example. Thus, it is suggested to use a “set of interventions aimed at mobility”¹.

Differently from adult patients, children are more complex from the point of view of mobilization and mobility interventions, since their chronological age, cognitive maturity, and level of sedation must be respected. These characteristics associated with the variability of pathophysiologies, which can affect seriously ill children, denote a heterogeneous population, which requires specific protocols of evidence-based EM².

Some barriers have been reported to the clinical condition of the patient, such as clinical instability;

difficulty in the clinical diagnosis and the severity of the disease; risk of displacement of devices (eg catheters and intra-tracheal cannula); excessive and/or inadequate analgesia dosage; physical constraints; obesity; inadequate nutritional status; lack of motivation in some children to participate in EM activities; among others^{3,4}. However, current studies³⁻⁶ show that multi-professional performance and family involvement contribute to the positive outcomes of EM as well as to minimize the mobilization barriers of sick children.

It is recommended that all PICU patients be evaluated by a physiotherapist regarding the possibility of participating in an EM protocol at admission at the Unit⁷, as well as its beginning within three days of the patient’s stay at the PICU, with levels/degrees of complexity according to their clinical condition and functional capacity^{1,2}.

Studies^{1,8,9} have demonstrated that EM provides an increase in physical function, reduction of PICU length of stay, reduction in the mechanical ventilation time and delirium frequency, improvement of the sleep-wake cycle, reduction of hospitalization costs,

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increased family satisfaction, increased satisfaction of the multi-professional team.

It is suggested that some evaluation and monitoring measures be put in place, such as scales that contemplate muscular strength and mobility (body function), like the Medical Research Council (MRC) scale score and handheld dynamometers; and motor/cognitive ones, like the Functional Status Score for the ICU (FSS-ICU)¹⁰; the evaluation of the level of sedation, such as the Ramsay scale or COMFORT, aiming at optimizing sedation and avoiding delirium (which can be evaluated by the all-critically ill children for delirium using the Preschool Confusion Assessment Method (psCAM, 6 months to 5 years) (CAPD; all ages) or the Pediatric Confusion Assessment Method (pCAM, 5 years and older), to effectively identify both hypoactive and hyperactive delirium⁷.

Monitoring of other markers, such as serum lactate and creatine phosphokinase, may be necessary in more severe cases in which there is no positive evolution (gain of functional independence) or in those with functional worsening after the start of the EM program. Nutritional and electrolyte evaluation (especially of calcium, sodium, magnesium, phosphorus, and vitamin D, which present correction with loss of mass and muscular function) should be considered in these cases. These measures are not yet fully defined in the literature, and clinical studies are needed.

In conclusion, several aspects, mainly related to the markers of increase in motor performance, mobility, and functionality, especially for infants and preschoolers, require studies to define secure protocols of EM in PICU.

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