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Afiliada a JOHNS HOPKINS MEDICINE INTERNACIONAL

CLC CLINICA LAS CONDES

Movilización y rehabilitación precoz en paciente crítico.

Klgo. Nicolás Montecinos G.
Intensivo Clínica las Condes

Temas

- Introducción
- Fisiopatología
- Evaluación Kinésica
- Intervención Kinésica
- Protocolo Motor

Introducción

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Introducción

El desarrollo de la medicina intensiva y la mejora de los equipos de trabajo ha generado que la sobrevida del paciente crítico aumente dramáticamente.

Eisner MD *et al.*(2001) Am J Respir Crit Care Med 164:231–236

Mayor sobrevida está asociada con un deterioro funcional importante y una disminución de la calidad de vida en el corto y largo plazo.

Herridge MS. *et al. (2011)* N Engl J Med; 364:1293–1304.

Experiencia de dos décadas en varios centros han mostrado que la debilidad neuromuscular aparece como una importante complicación dentro de la UCI .

Op de Coul AAW. Clin Neurol Neurosurg 1991;93(1):27–33.

Se`ze M, Eur Neurol 2000;43(2):61–69.

El paciente crítico está expuesto a reposo prolongado, a VM, disfunción de órganos vitales, sepsis, hipoxemia y toxicidad asociada a drogas.

Anna Christakou (2013) Hosp. Chronicles;8(4): 164–170

¿Qué es la DA – UCI?

¿Cómo se produce?

¿Qué hacemos como Kinesiólogos?

AMERICAN THORACIC SOCIETY DOCUMENTS

An Official American Thoracic Society Clinical Practice Guideline: The Diagnosis of Intensive Care Unit–acquired Weakness in Adults

Eddy Fan, Fern Cheek, Linda Chlan, Rik Gosselink, Nicholas Hart, Margaret S. Herridge, Ramona O. Hopkins, Catherine L. Hough, John P. Kress, Nicola Latronico, Marc Moss, Dale M. Needham, Mark M. Rich, Robert D. Stevens, Kevin C. Wilson, Chris Winkelman, Doug W. Zochodne, and Naeem A. Ali; on behalf of the ATS Committee on ICU-acquired Weakness in Adults

THIS OFFICIAL CLINICAL PRACTICE GUIDELINE OF THE AMERICAN THORACIC SOCIETY (ATS) WAS APPROVED BY THE ATS BOARD OF DIRECTORS, AUGUST 2014

Am J Respir Crit Care Med Vol 190, Iss 12, pp 1437–1446, Dec 15, 2014

Definition

ICUAW is a syndrome of generalized limb weakness that develops while the patient is critically ill and for which there is no alternative explanation other than the critical illness itself (12). There is no universally accepted reference standard for

CIP

Es una alteriación axonal distal (motora-sensitiva) que afecta las extremidades y los músculos respiratorios.

Bolton CF, et al. Journal of Neurology, Neurosurgery & Psychiatry 1986;49(5):563–73.

CIM

Una disfunción musucloesquelética en el paciente crítico deriva de una combinación de variables que disminuyen la masa muscular y deteriora la contractilidad.

Sander HW, et al. Muscle Nerve 2002;26:499–505

Incidencia

La CIP se desarollará en un 60% de los pacientes que presenten SDRA, un 70% en pacientes con SIRS y un 100% en pacientes que desarrollen MOF

Bercker S, et al.*Crit Care Med* 2005, 33:711-715

Tennila A, et al.*Intensive Care Med* 2000, 26:1360-1363

Witt NJ, Zochodne, et al. *Chest* 1991, 99:176-184.

La CIM se desarrollará en un 38% de los pacientes que ingresan a una UCI y en un 68% de aquellos que llevan más de 7 días dentro de esta.

Bednarik J, et al. *J Neurol* 2005, 252:343-351.

Coakley JH,et al. *Intensive Care Med* 1998, 24:801-807.

Siendo 61 años el promedio de edad de los pacientes con ICU AW.

Am J Respir Crit Care Med Vol 190, Iss 12, pp 1437–1446, Dec 15, 2014

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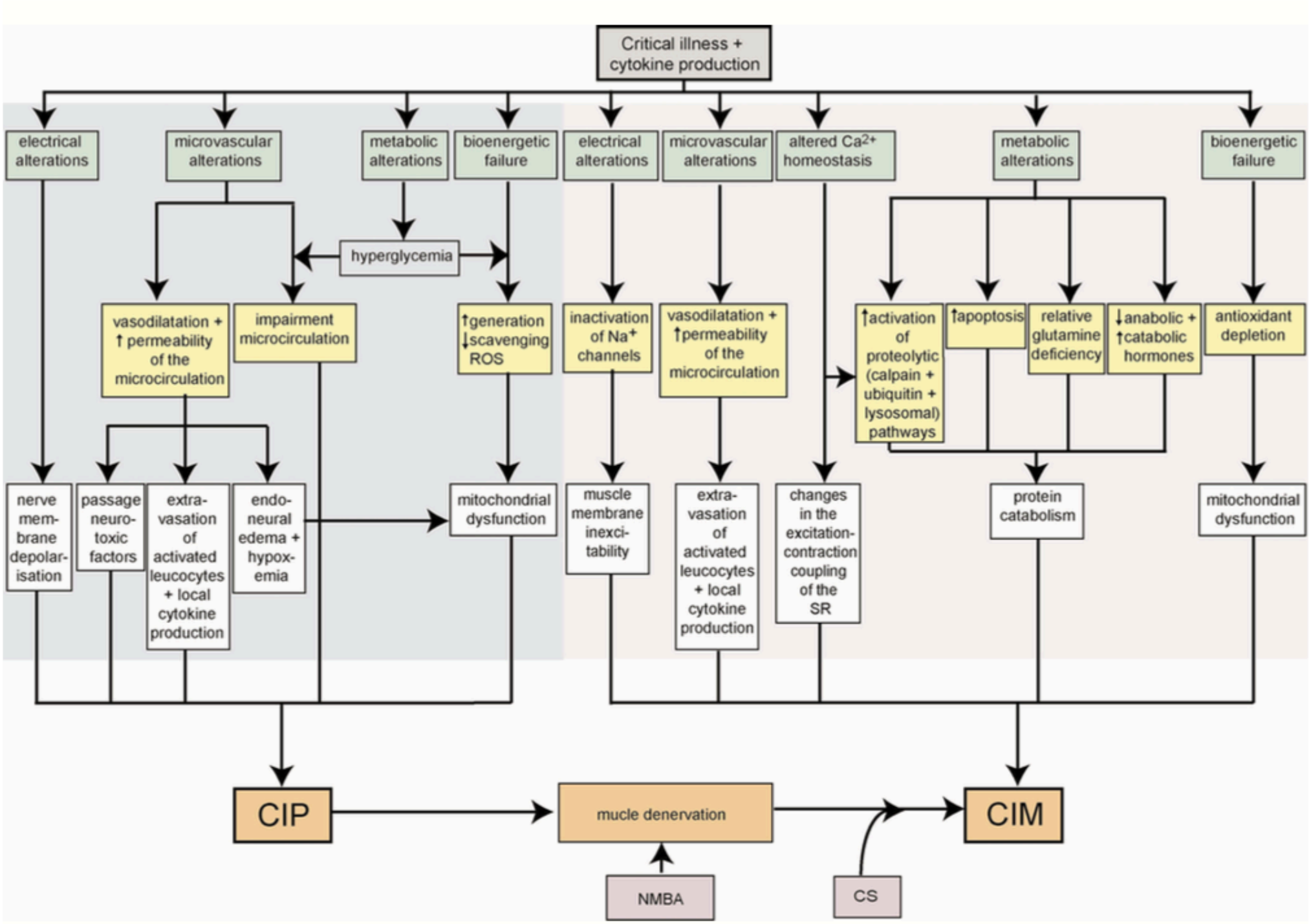
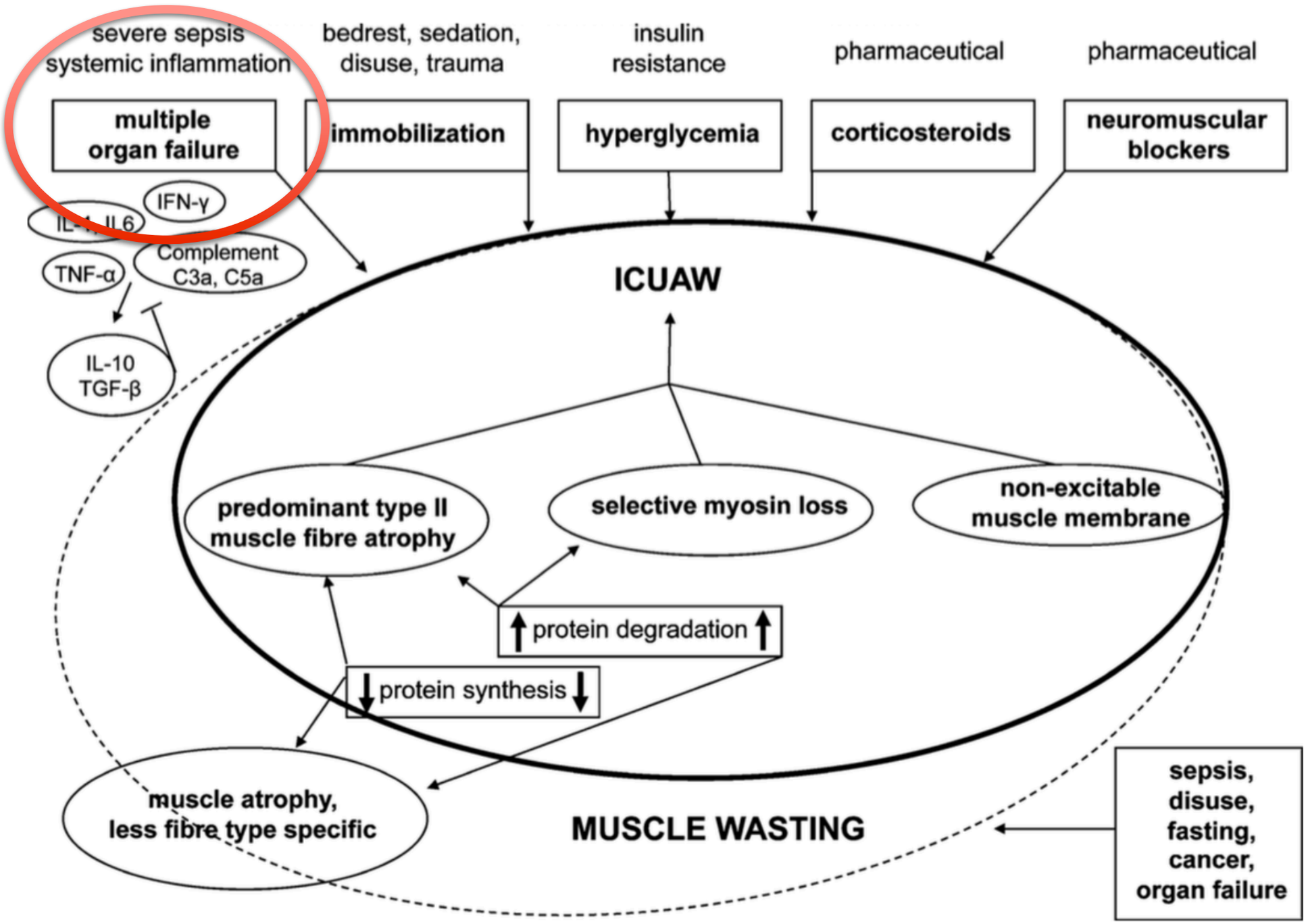
Fisiopatología



Greet Hermans , *et al.Critical Care* 2008, 12:238



J Cachexia Sarcopenia Muscle (2010) 1:147–157

Inflamación

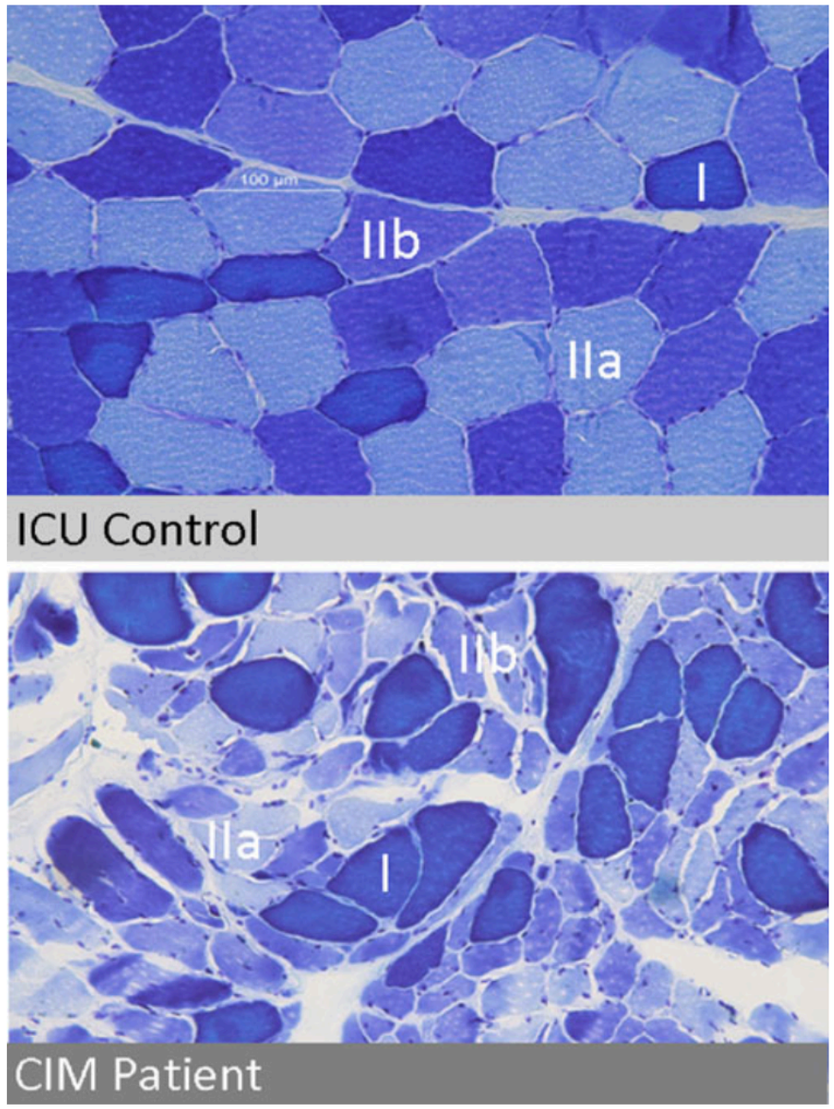
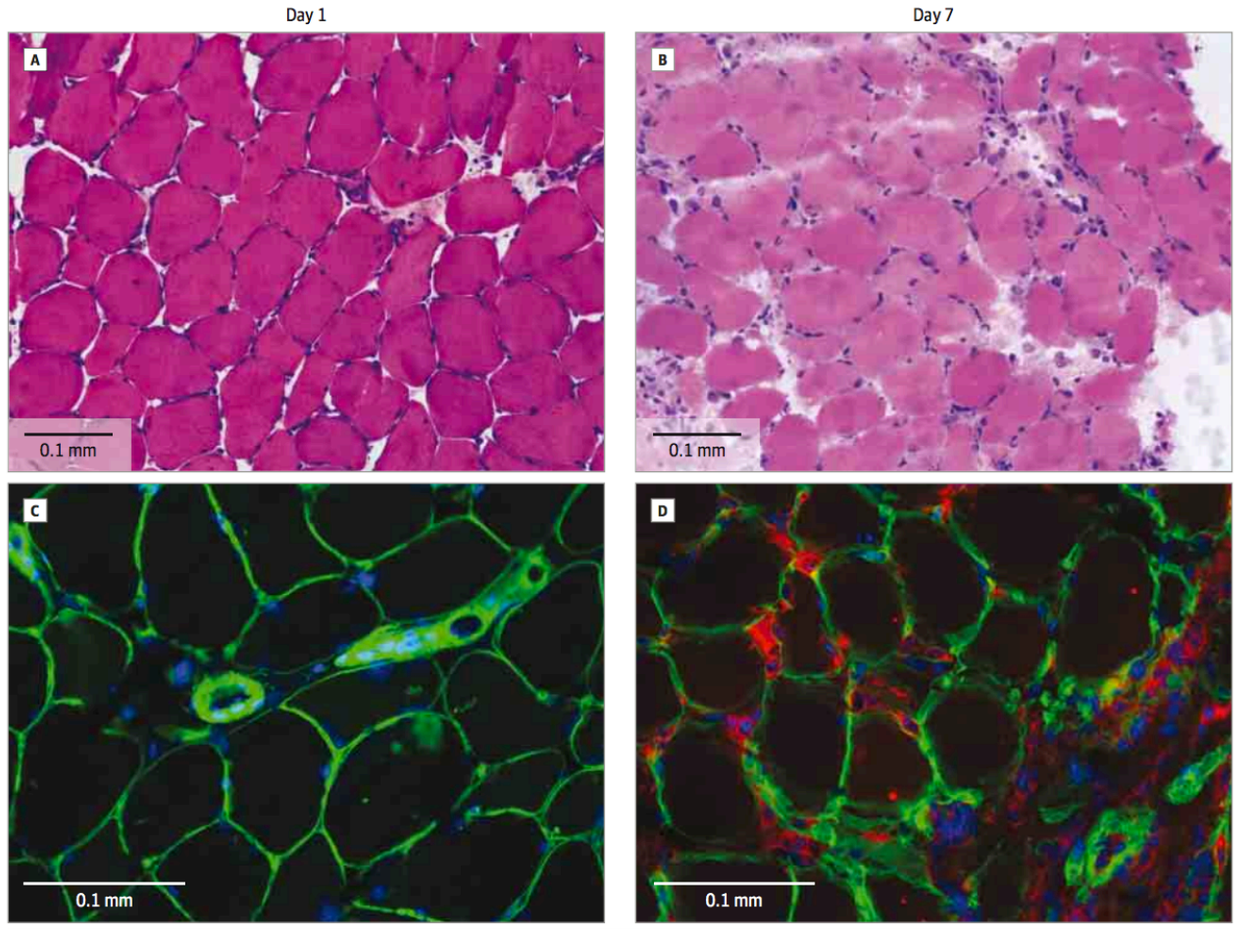


Fig. 3 Muscle histologies (vastus lateralis muscle) from an ICU patient with critical illness myopathy (subclassification of ICUAW) and an ICU patient without this complication, referred to as ICU control. ATPase/Toludine blue staining differentiates type I, IIa and IIb muscle fibres as indicated

J Cachexia Sarcopenia Muscle (2010) 1:147–157



Healthy muscle is seen on day 1 (A, C) with necrosis and a cellular infiltrate on day 7 (B, D). This infiltrate was CD68 positive on immunostaining, indicating macrophage origin (red). A, B are hematoxylin and eosin stain, and C, D was immunostaining, with CD68 for red, laminin (myofiber outline) for green, and 4',6-diamidion-2-pheylidole (a nuclear marker) for blue.

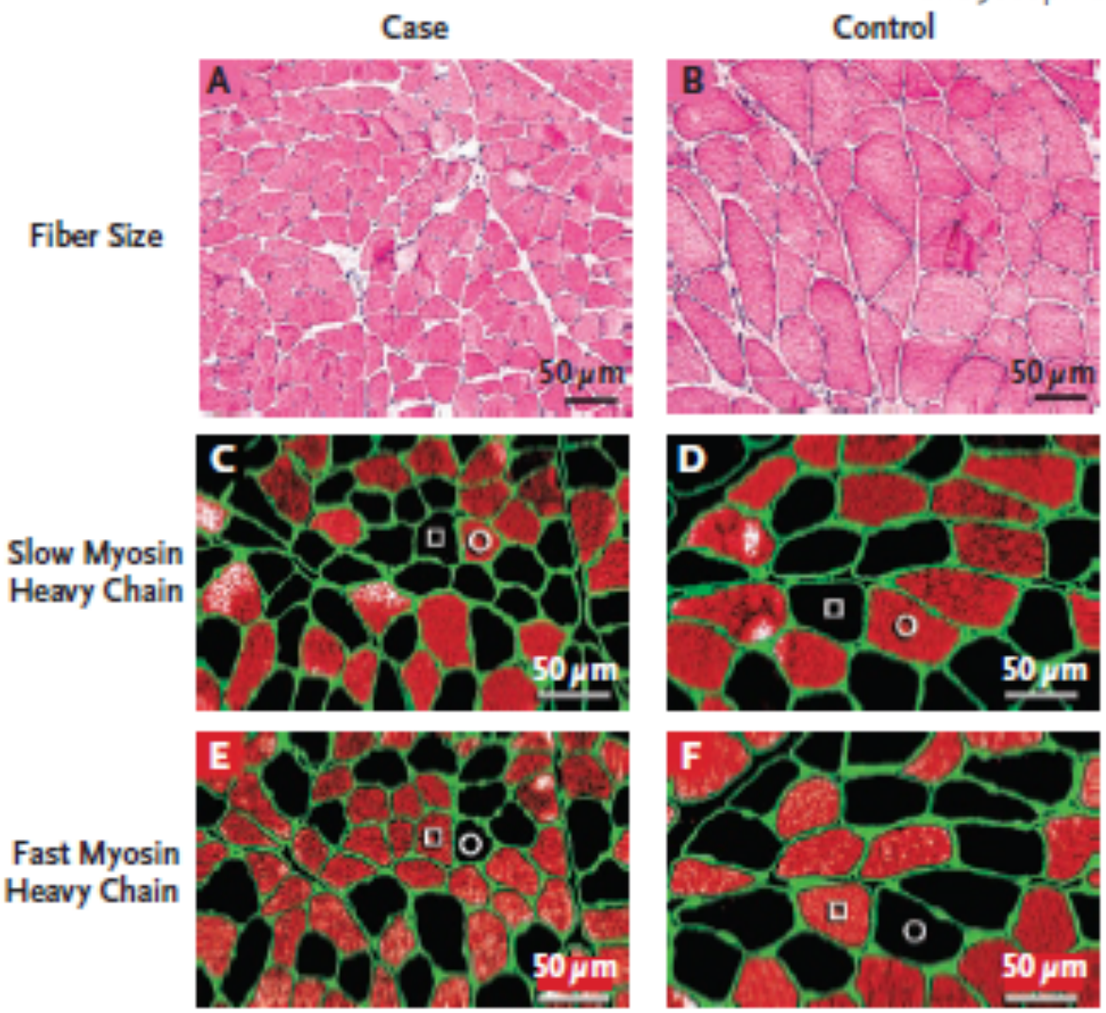
Zudin A. Puthuchear, et al. JAMA October 16, 2013 Volume 310, Number 15

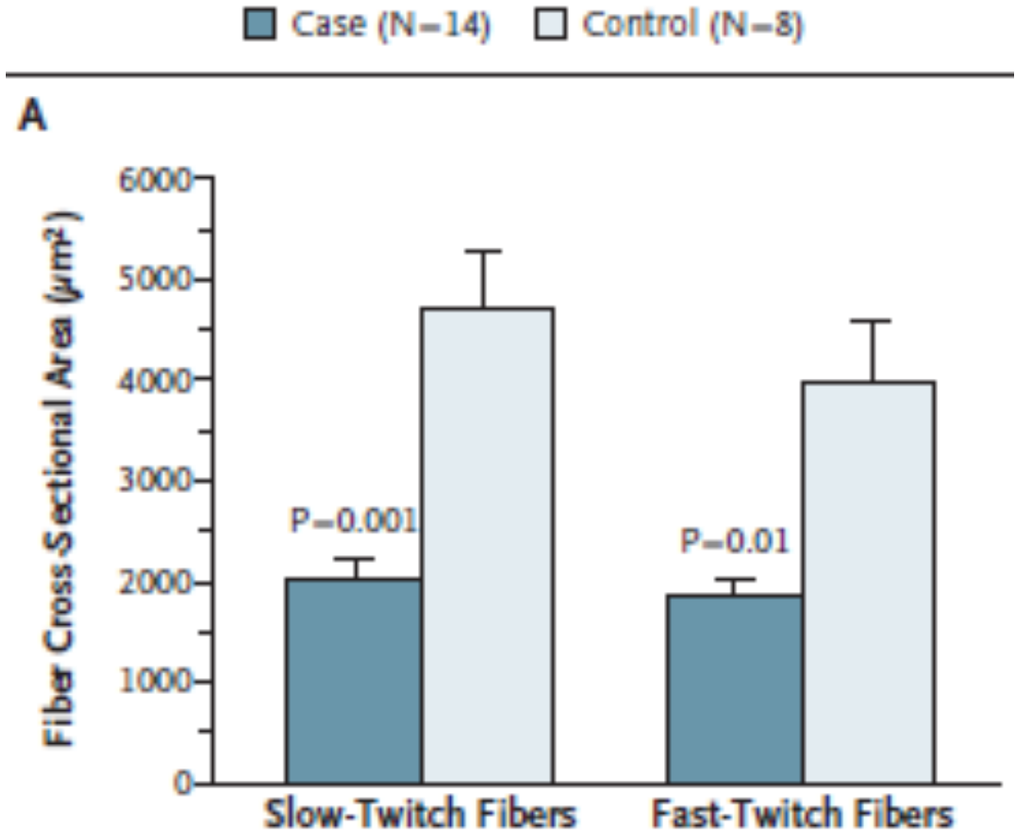
The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 MARCH 27, 2008 VOL. 358 NO. 13

Rapid Disuse Atrophy of Diaphragm Fibers in Mechanically Ventilated Humans

Sanford Levine, M.D., Taitan Nguyen, B.S.E., Nyali Taylor, M.D., M.P.H., Michael E. Friscia, M.D., Murat T. Budak, M.D., Ph.D., Pamela Rothenberg, B.A., Jianliang Zhu, M.D., Rajeev Sachdeva, M.D., Seema Sonnad, Ph.D., Larry R. Kaiser, M.D., Neal A. Rubinstein, M.D., Ph.D., Scott K. Powers, Ph.D., Ed.D., and Joseph B. Shrager, M.D.





Review

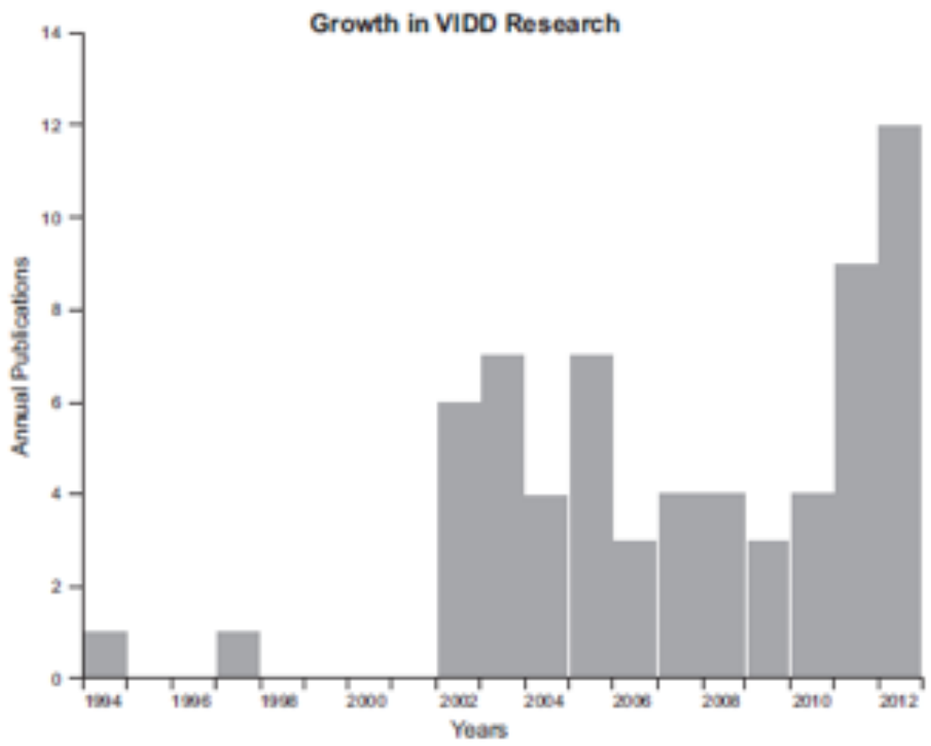
Am J Physiol Regul Integr Comp Physiol 305: R464–R477, 2013.
First published July 10, 2013; doi:10.1152/ajpregu.00231.2013.

Ventilator-induced diaphragm dysfunction: cause and effect

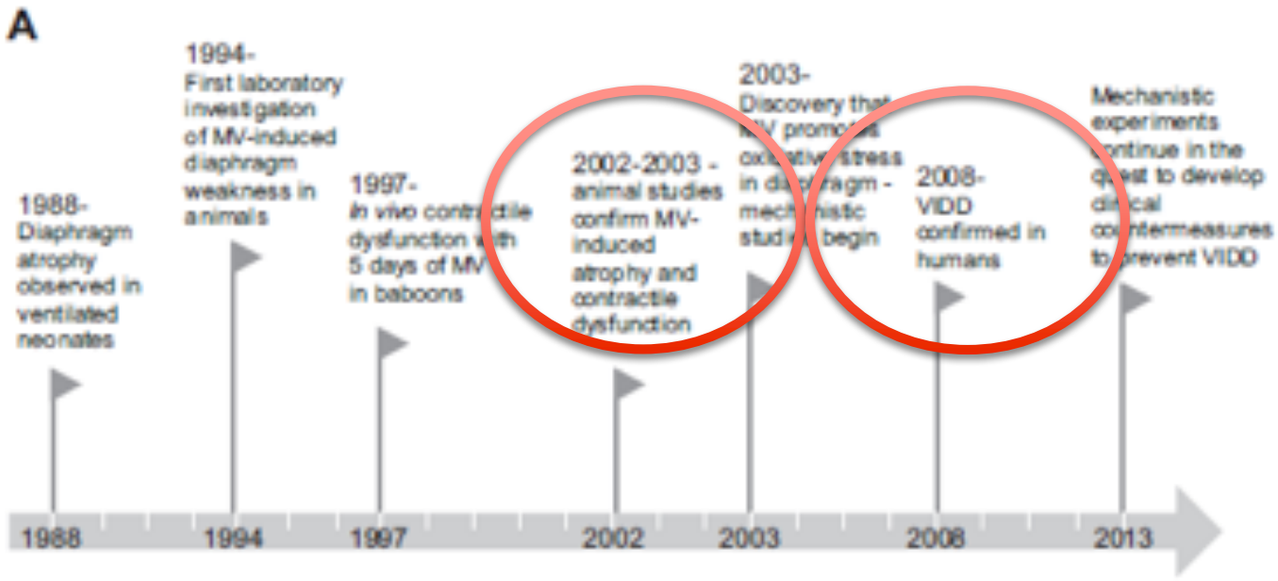
Scott K. Powers, Michael P. Wiggs, Kurt J. Sollanek, and Ashley J. Smuder
Department of Applied Physiology and Kinesiology, University of Florida, Gainesville, Florida

Submitted 8 May 2013; accepted in final form 8 July 2013

B



A



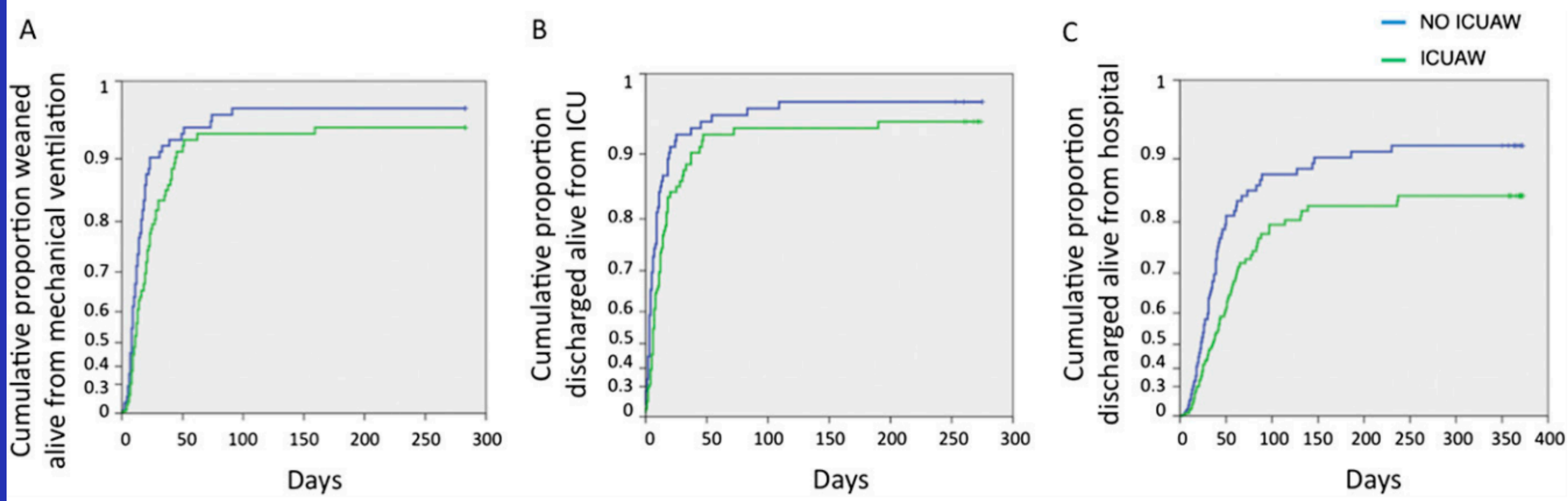
ORIGINAL ARTICLE

Acute Outcomes and 1-Year Mortality of Intensive Care Unit–acquired Weakness

A Cohort Study and Propensity-matched Analysis

Greet Hermans[1,2], Helena Van Mechelen[2], Beatrix Clerckx[2,3], Tine Vanhullebusch[2], Dieter Mesotten[2,3], Alexander Wilmer[1], Michael P. Casaer[2,3], Philippe Meersseman[1], Yves Debaveye[2,3], Sophie Van Cromphaut[2,3], Pieter J. Wouters[2,3], Rik Gosselink[4], and Greet Van den Berghe[2,3]

Greet Hermans, et al. American Journal of Respiratory and Critical Care Medicine Vol 190 N 4. 2014



< destete

< egreso vivo UCI

< egreso vivo Hosp

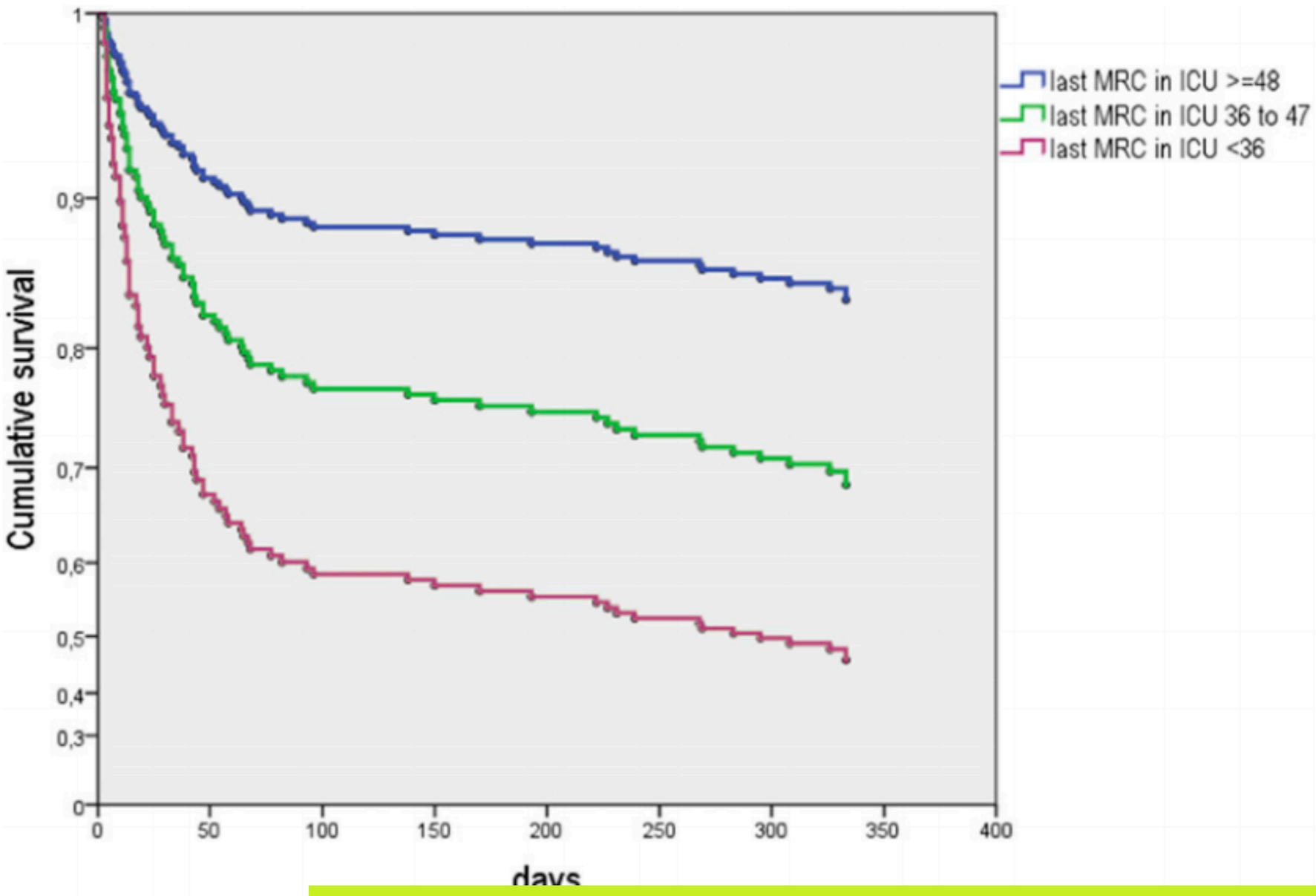
ORIGINAL ARTICLE

Acute Outcomes and 1-Year Mortality of Intensive Care Unit–acquired Weakness

A Cohort Study and Propensity-matched Analysis

Greet Hermans[1,2], Helena Van Mechelen[2], Beatrix Clerckx[2,3], Tine Vanhullebusch[2], Dieter Mesotten[2,3], Alexander Wilmer[1], Michael P. Casaer[2,3], Philippe Meersseman[1], Yves Debaveye[2,3], Sophie Van Cromphaut[2,3], Pieter J. Wouters[2,3], Rik Gosselink[4], and Greet Van den Berghe[2,3]

Greet Hermans, et al. American Journal of Respiratory and Critical Care Medicine Vol 190 N 4. 2014



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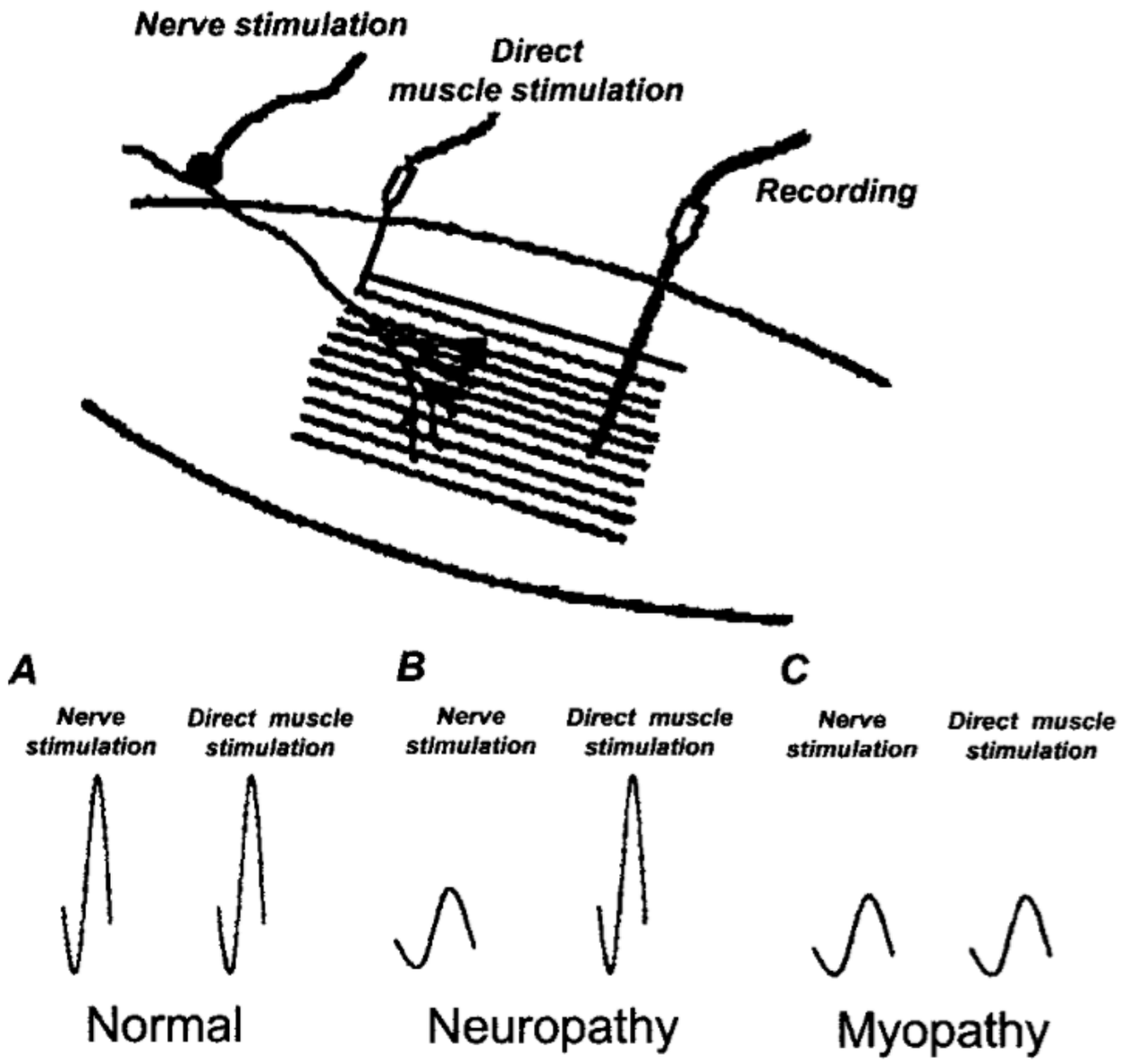
Evaluación

Clinical Approach to the Weak Patient in the Intensive Care Unit

Upinder K Dhand MD



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CLC CLINICA LAS CONDES

CURRENT OPINION

ICU-based rehabilitation and its appropriate metrics

Rik Gosselink[a,b], *Dale Needham*[c], *and Greet Hermans*[d,e]

Volume 18 • Number 5 • October 2012

Rehabilitación

Muscular

Rendimiento Funcional

Pulmonar

Cognitivo - Cooperación

En síntesis…

Muscular	Rendimiento Funcional	Pulmonar	Cognitivo - Cooperación
MRC	Barthel	PiMax	RASS
Handgrip Dinamometer	Katz	PeMax	SAS
US Muscular	FIM		5sQ
	DeMMI		Glasgow
	FSS - ICU		CAM - ICU
	PFIT		

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Tratamiento

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CLC CLINICA LAS CONDES

Interventions for preventing critical illness polyneuropathy and critical illness myopathy (Review)

Hermans G, De Jonghe B, Bruyninckx F, Van den Berghe G

THE COCHRANE COLLABORATION®

Terapia Nutricional

Terapia Hormonal

Terapia Física Temprana

Terapia Electroestimulación

Hermans G, et al. *Cochrane Database of Systematic Reviews* 2014, Issue 1. Art. No.: CD006832

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Terapia Física y NEMS

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Physical Therapy for the Critically Ill in the ICU: A Systematic Review and Meta-Analysis*

Geetha Kayambu, BSc Phyt (Hons)[1]; Robert Boots, PhD[1,2]; Jennifer Paratz, PhD[1]

Critical Care Medicine 2013; 41: 1543 - 1554

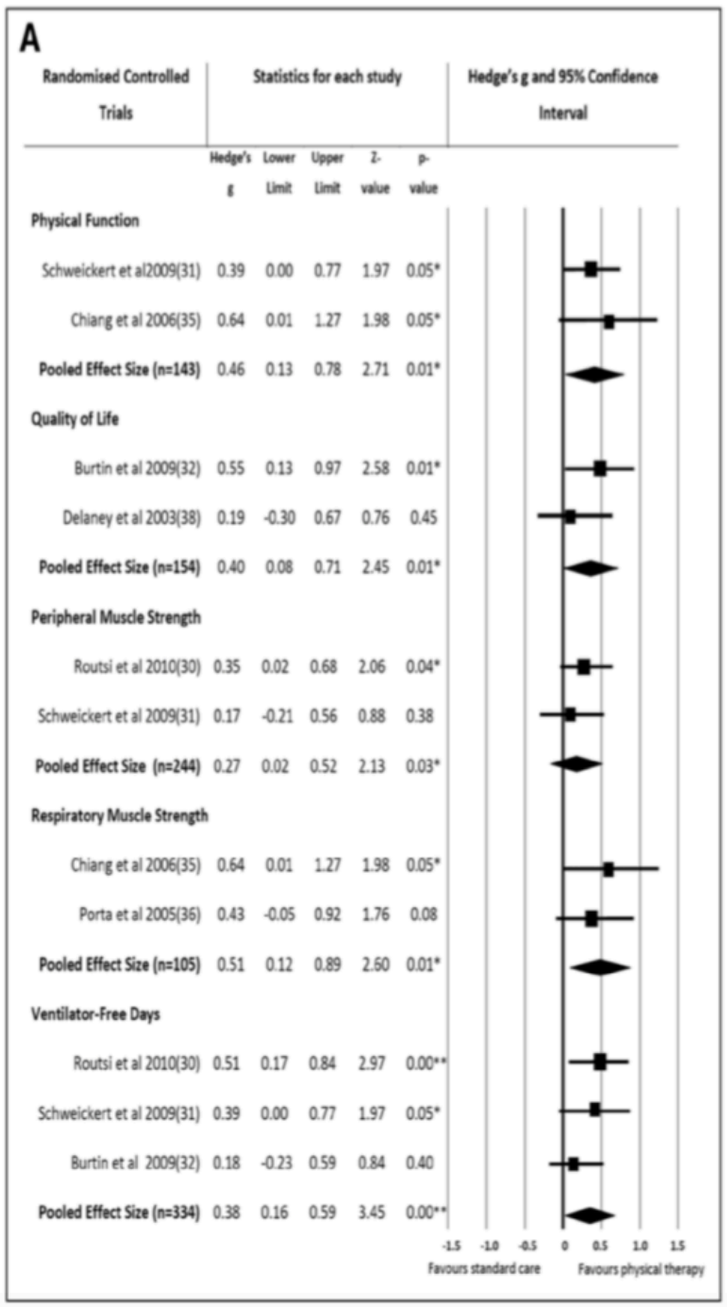
Funciónalidad

Calidad de Vida

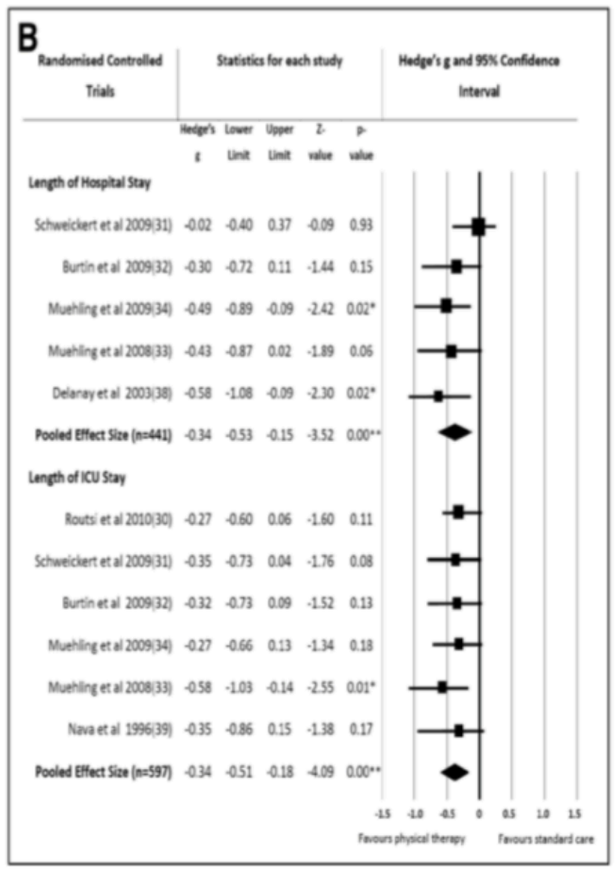
Fuerza Perisférica

Fuerza Musc. Respiratoria

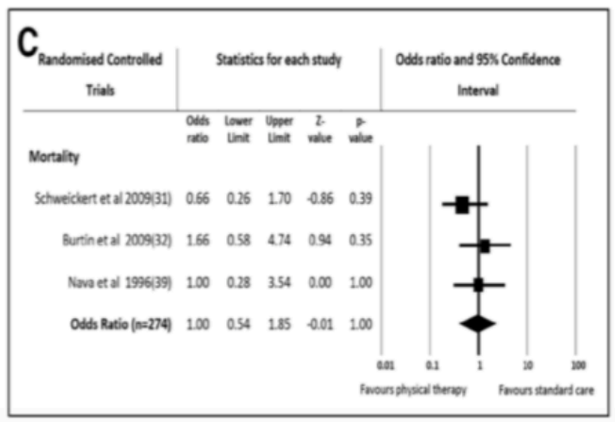
Días fuera de VMi



Estancia Hospital



Estancia UCI



Mortalidad

Early physical and occupational therapy in mechanically ventilated, critically ill patients: a randomised controlled trial

William D Schweickert, Mark C Pohlman, Anne S Pohlman, Celerina Nigos, Amy J Pawlik, Cheryl L Esbrook, Linda Spears, Megan Miller, Mietka Franczyk, Deanna Deprizio, Gregory A Schmidt, Amy Bowman, Rhonda Barr, Kathryn E McCallister, Jesse B Hall, John P Kress

Lancet. 2009;373:1874-82.

	Intervention (n=49)	Control (n=55)	p value
Return to independent functional status at hospital discharge	29 (59%)	19 (35%)	0·02
ICU delirium (days)	2·0 (0·0–6·0)	4·0 (2·0–7·0)	0·03
Time in ICU with delirium (%)	33% (0–58)	57% (33–69)	0·02
Hospital delirium (days)	2·0 (0·0–6·0)	4·0 (2·0–8·0)	0·02
Hospital days with delirium (%)	28% (26)	41% (27)	0·01
Barthel Index score at hospital discharge	75 (7·5–95)	55 (0–85)	0·05
ICU-acquired paresis at hospital discharge	15 (31%)	27 (49%)	0·09
Ventilator-free days*	23·5 (7·4–25·6)	21·1 (0·0–23·8)	0·05
Duration of mechanical ventilation (days)	3·4 (2·3–7·3)	6·1 (4·0–9·6)	0·02
Duration of mechanical ventilation, survivors (days)	3·7 (2·3–7·7)	5·6 (3·4–8·4)	0·19
Duration of mechanical ventilation, non-survivors (days)	2·5 (2·4–5·5)	9·5 (5·9–14·1)	0·04
Length of stay in ICU (days)	5·9 (4·5–13·2)	7·9 (6·1–12·9)	0·08
Length of stay in hospital (days)	13·5 (8·0–23·1)	12·9 (8·9–19·8)	0·93
Hospital mortality	9 (18%)	14 (25%)	0·53

Data are n (%), median (IQR), or mean (SD). ICU=intensive care unit. *Ventilator-free days from study day 1 to day 28. Barthel Index scale 0–100, APACHE II scale 0–71.

***Table 3*: Main outcomes according to study group**

Movilidad articular

Estiramientos musculares

Posicionamiento

Ejercicios cíclicos, activos y resistidos

Transferencias

Balance y estabilidad

Marcha

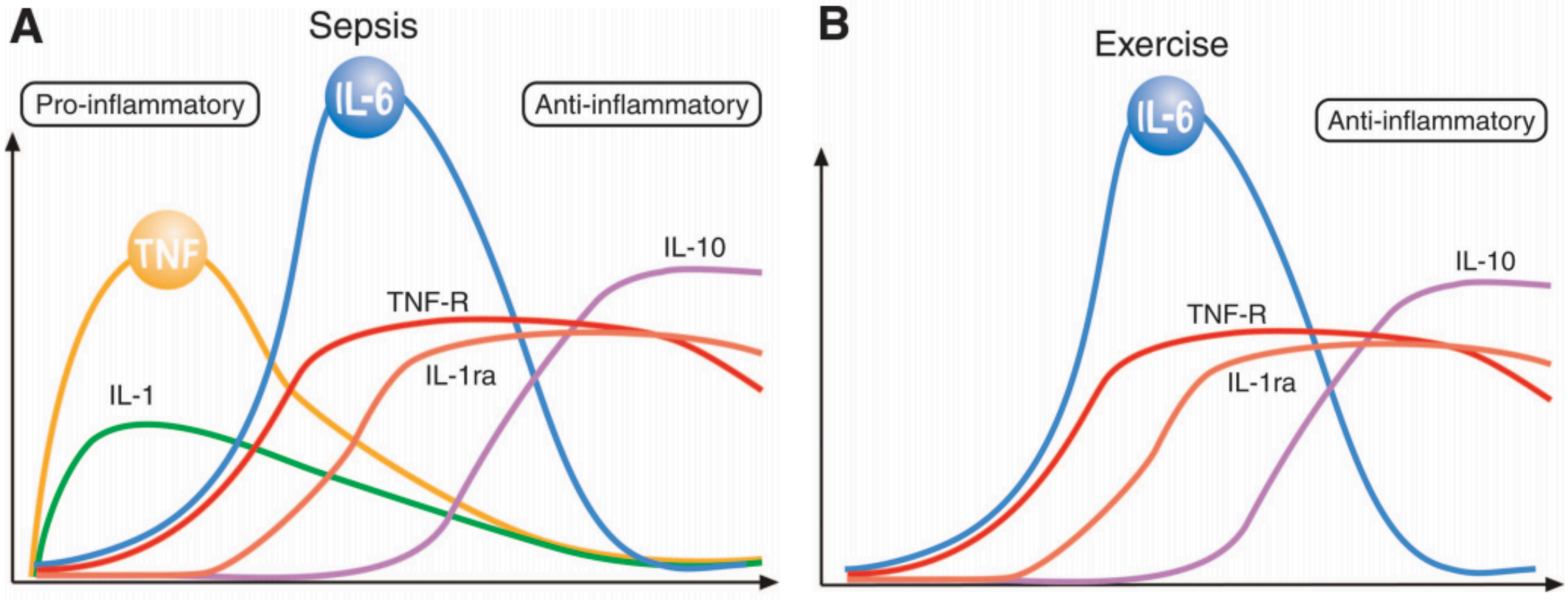
Estabilidad

Nivel de Cooperación

The anti-inflammatory effect of exercise

Anne Marie W. Petersen and Bente Klarlund Pedersen

J Appl Physiol 98: 1154–1162, 2005



Elongación Pasiva

Reduce la disminución de sarcomeros en ratas

Williams PE. Ann Rheum Dis 1990

Previene la reducción de fibras musculares en pacientes críticos

Griffiths RD y cols. Nutrition 1995

Ejercicios de Resistencia

Previene la reducción de síntesis proteica muscular

Ferrando y cols. J Appl Physiol 1997;82:807-810

Deambulación

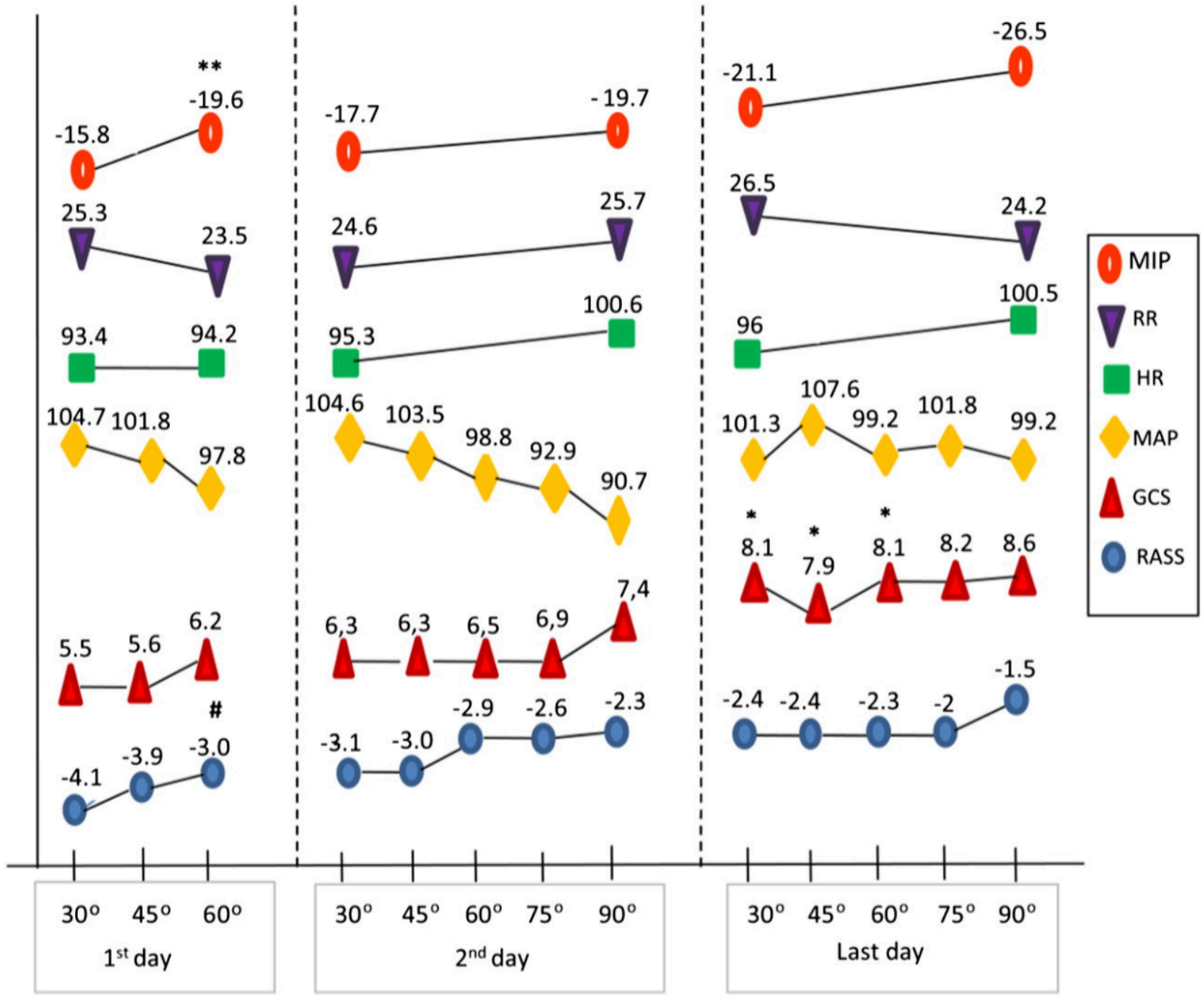
Asociada con mejores outcomes en los pacientes críticos (estadía en VM, UCI y Hospital)

Ferrando y cols. J Appl Physiol 1997;82:807-810

Passive orthostatism (tilt table) in critical patients: Clinicophysiologic evaluation

Beatriz Fernandes Toccolini, RT [a,*], Erica Fernanda Osaku, RT, MSc [a], Claudia Rejane Lima de Macedo Costa, RT, MSc [a], Sandy Nogueira Teixeira, RT [a], Nicolle Lamberti Costa, RT [a], Maria Fernanda Cândia, RT [a], Marcela Aparecida Leite, RT [a], Carlos Eduardo de Albuquerque, RT, MSc [a], Amaury Cezar Jorge, MD, MSc [a,b], Péricles Almeida Delfino Duarte, MD, PhD [a,b]

Journal of Critical Care xxx (2015) xxx–xxx



Contents lists available at ScienceDirect

Journal of Critical Care

journal homepage: www.jccjournal.org

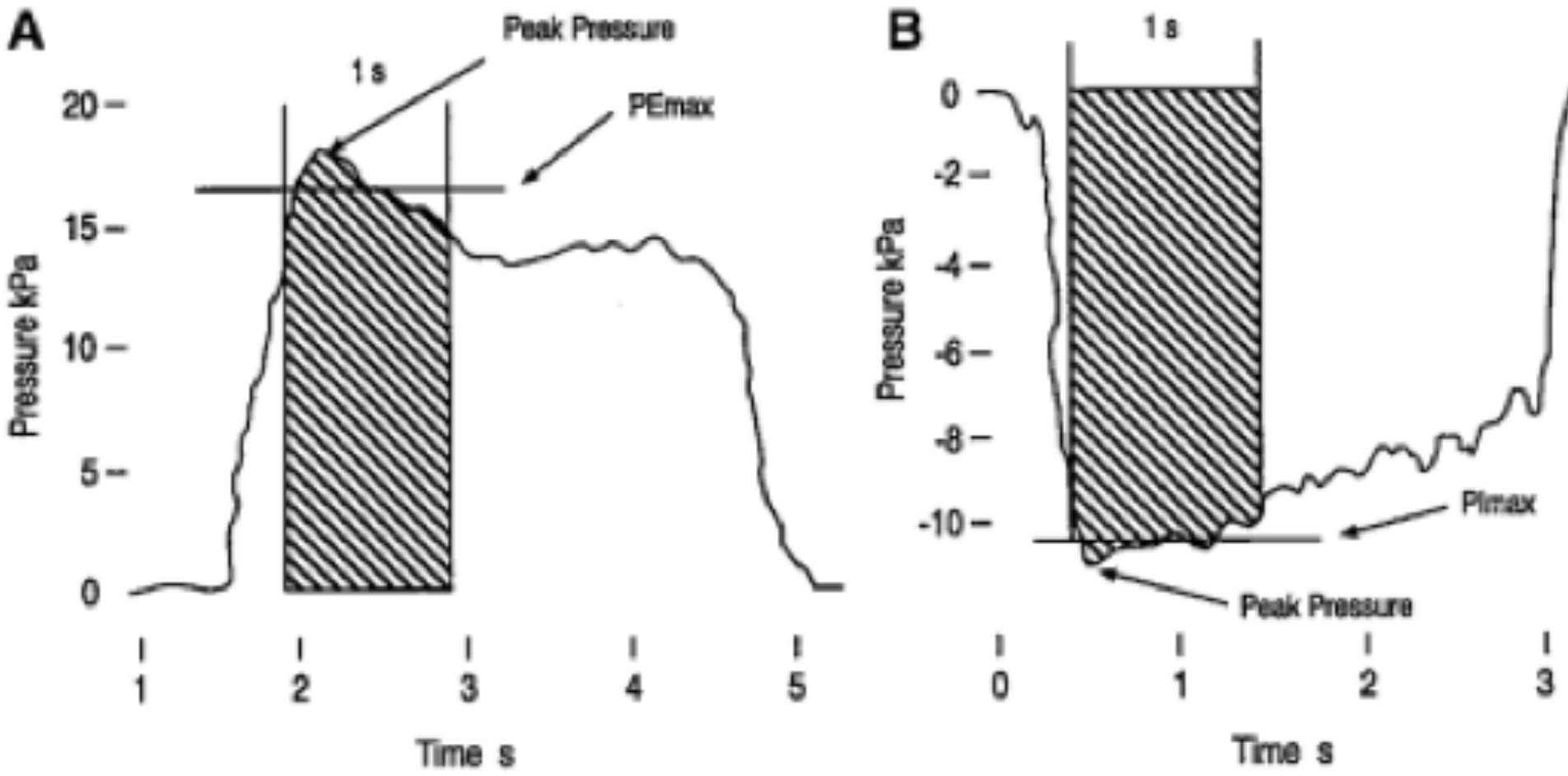
Feasibility of neuromuscular electrical stimulation in critically ill patients☆,☆☆

Johan Segers, PT, MSc [a], Greet Hermans, MD, PhD [b], Frans Bruyninckx, MD, PhD [c], Geert Meyfroidt, MD, PhD [d], Daniel Langer, PT, PhD [a], Rik Gosselink, PT, PhD [a,*]

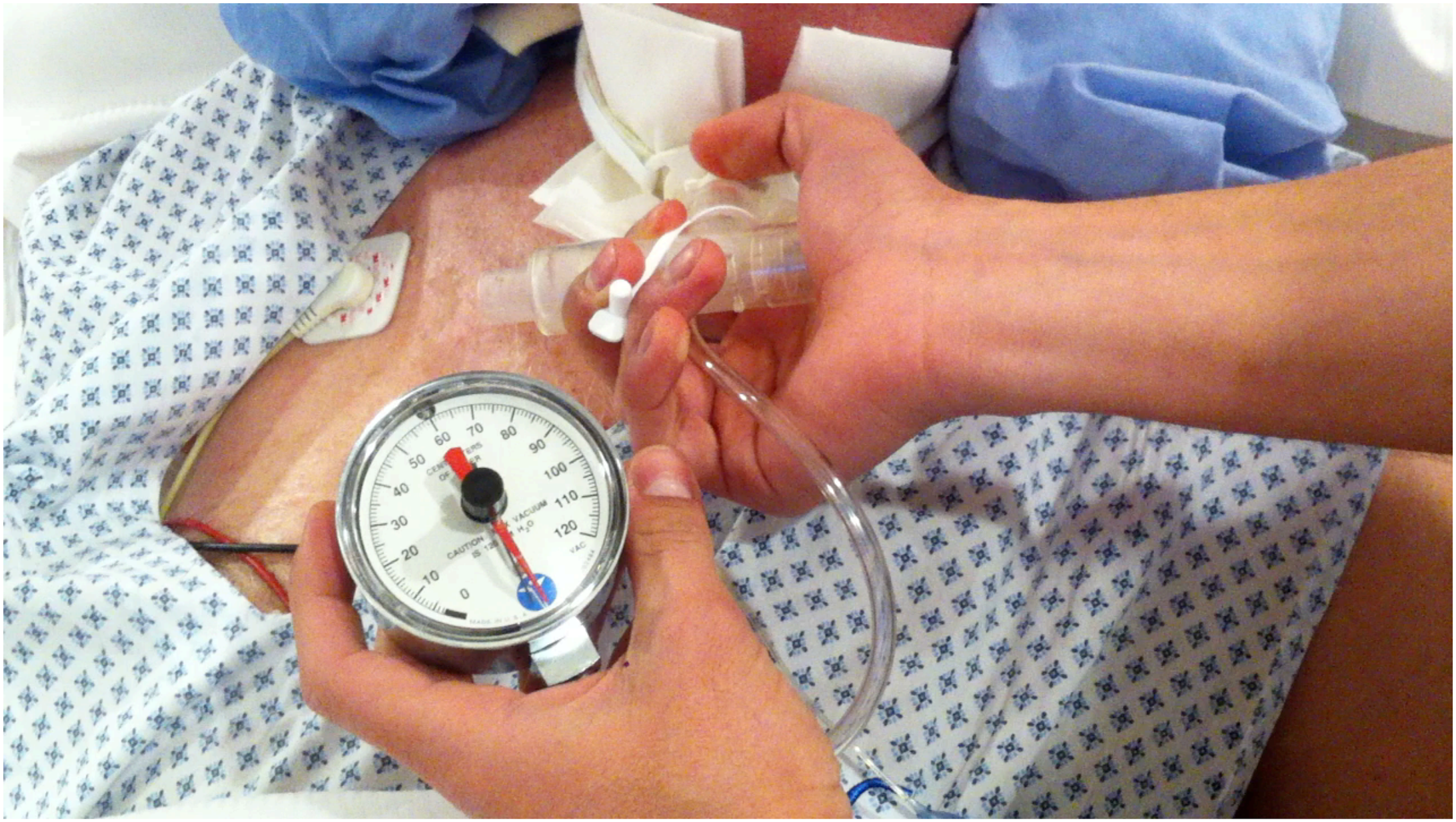
Journal of Critical Care 29 (2014) 1082–1088

La NMES es un procedimiento seguro de realizar en paciente crítico

La NMES pareciera tener resultados positivos en el área de sección transversal de musculatura de extremidades


A
Peak Pressure
1 s
PEmax
20
15
10
5
0
Pressure kPa
1
2
3
4
5
Time s
B
1 s
0
-2
-4
-6
-8
-10
Pressure kPa
Pimax
Peak Pressure
0
1
2
3
Time s

PiMax con Pimometro



REVIEW

Reference values for maximal inspiratory pressure: A systematic review

Isabela MB Sclauser Pessoa PT PhD[1], Verônica Franco Parreira PT PhD[2], Guilherme AF Fregonezi PT PhD[3], A William Sheel BPE PhD[4], Frank Chung PT MSc[5], W Darlene Reid PT PhD[6,7,8]

Can Respir J Vol 21 No 1 January/February 2014

TABLE 1
Ratings of Quality Assessment of Diagnostic Accuracy Studies (QUADAS)

	QUADAS rating							
Author (reference), year	1	2	3	8	12	13	14	Total (of 7)
Cook et al [11], 1964	No	No	No	No	No	No	Unclear	0
Ringqvist [12], 1966	No	No	No	No	Yes	No	Yes	2
Black and Hyatt [9], 1969	No	No	No	Unclear	No	No	Unclear	0
Leech et al [13], 1983	Yes	Yes	No	No	Yes	Yes	Yes	5
Wilson et al [14], 1984	No	No	No	No	No	No	Unclear	0
Carrero Jr et al [15], 1985	No	No	No	Yes	No	Yes	Unclear	2
Viruben et al [16], 1987	No	No	No	Yes	No	Unclear	Unclear	1
Mofhuwa et al [17], 1988	Yes	Yes	Yes	Yes	Yes	No	Yes	6
Bruschi et al [18], 1992	No	No	No	Yes	No	Yes	Yes	3
Enright et al [19], 1994	No	No	No	Yes	Yes	No	Yes	3
Enright et al [21], 1998	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7
Johan et al [22], 1997	Yes	Yes	Unclear	Unclear	Yes	No	Unclear	3
Pande et al [23], 1998	Yes	Yes	No	No	Yes	No	Unclear	3
Harik-Khan et al [8], 1998	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7
Nader et al [24], 1999	Yes	Yes	No	No	Yes	No	Unclear	3
Hautmann et al [25], 2000	Yes	Yes	No	No	Yes	Unclear	Yes	4
Wohlgemuth et al [26], 2003	Yes	Yes	Yes	Yes	Yes	No	Unclear	5
Windisch et al [27], 2004	Yes	Yes	Yes	Yes	Yes	No	Unclear	5
Sachs et al [28], 2009	No	No	No	No	Yes	Yes	Yes	3
Enrães et al [29], 2010	Yes	Yes	Yes	Yes	Yes	No	Yes	6
Costa et al [30], 2010	Yes	Yes	No	No	Yes	No	Unclear	3
Dopelelrolima et al [10], 2011	No	No	No	No	No	No	Unclear	0
Subtotals for items	13	13	6	10	15	6	10	

QUADAS items (36): 1. Was the spectrum of persons representative of the demographics of the patients who will receive the test in practice?; 2. Were selection

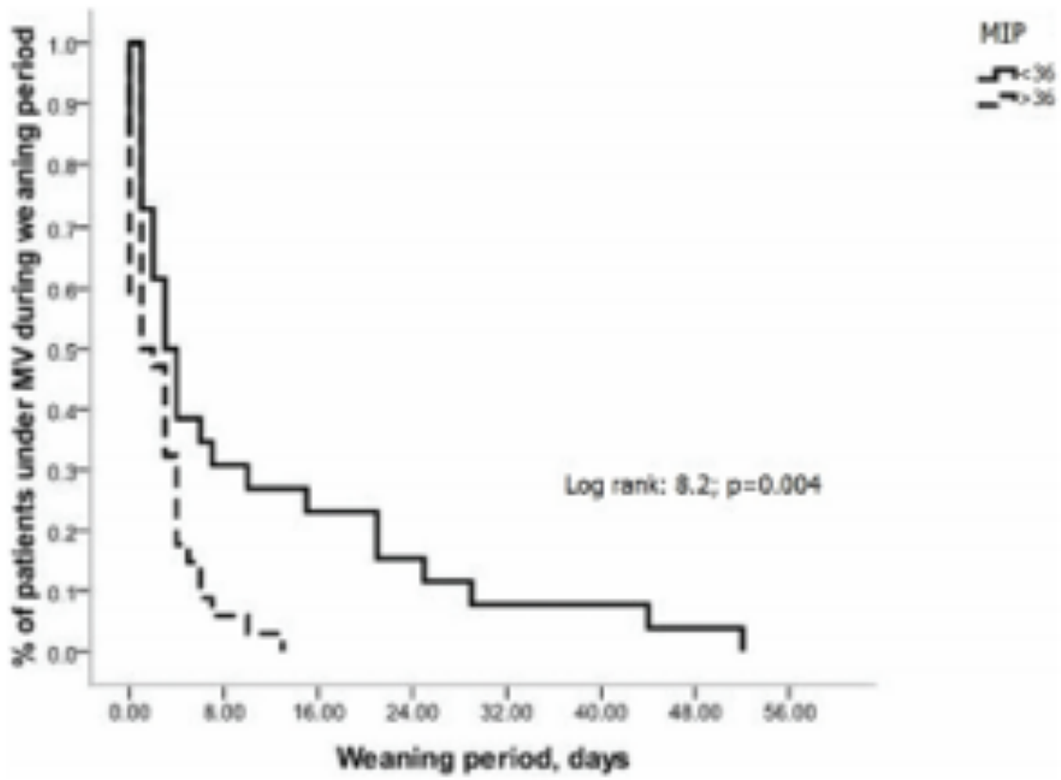
TABLE 4
Maximal inspiratory pressure (MIP) for men and women in different age groups derived from the random-effects model used in the meta-analysis

	Men		Women	
Age group, years	Studies, n/sample size, n	MIP, cmH_2O, mean (95% CI)	Studies, n/sample size, n	MIP, cmH_2O, mean (95% CI)
18–29	6/96	128.0 (116.3–139.5)	6/92	97.0 (88.6–105.4)
30–39	6/69	128.5 (118.3–138.7)	6/66	89.0 (84.5–93.5)
40–49	6/72	117.1 (104.9–129.2)	6/71	92.9 (78.4–107.4)
50–59	5/61	108.1 (98.7–117.6)	5/60	79.7 (74.9–84.9)
60–69	5/65	92.7 (84.6–100.8)	5/66	75.1 (67.3–82.9)
70–83	5/63	76.2 (66.1–86.4)	5/59	65.3 (57.8–72.7)

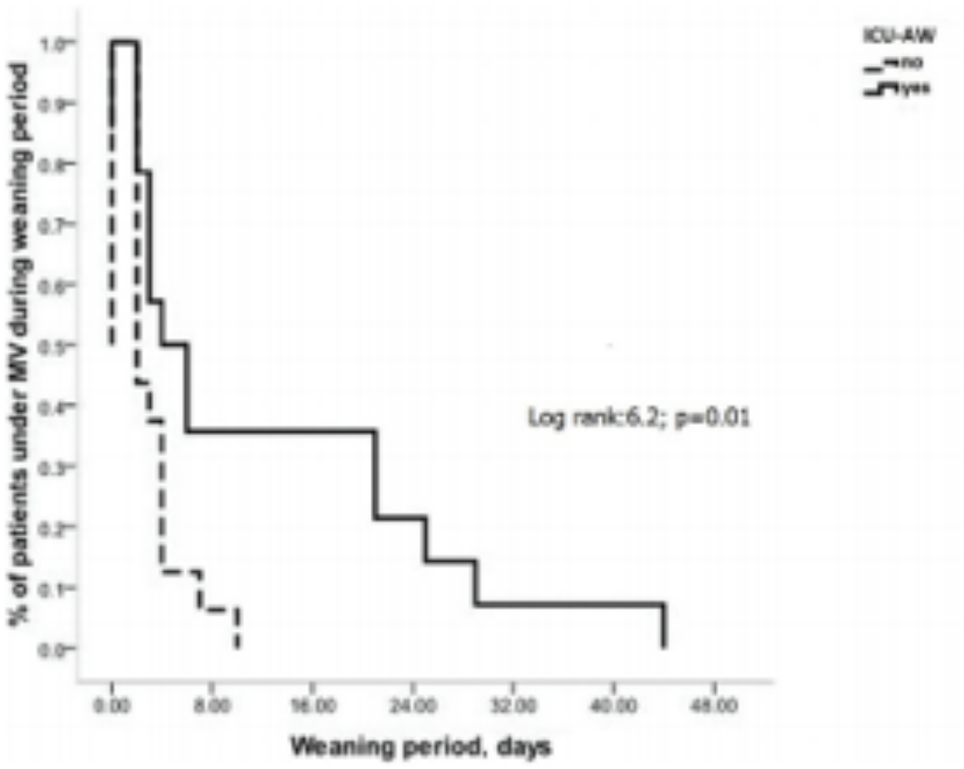
RESEARCH ARTICLE Open Access

Maximum inspiratory pressure, a surrogate parameter for the assessment of ICU-acquired weakness

BMC Anesthesiol 2011; 11:14.



<36cmH20 vs Weaning



ICUAW vs Weaning

ELSEVIER

PHYSIOTHERAPY

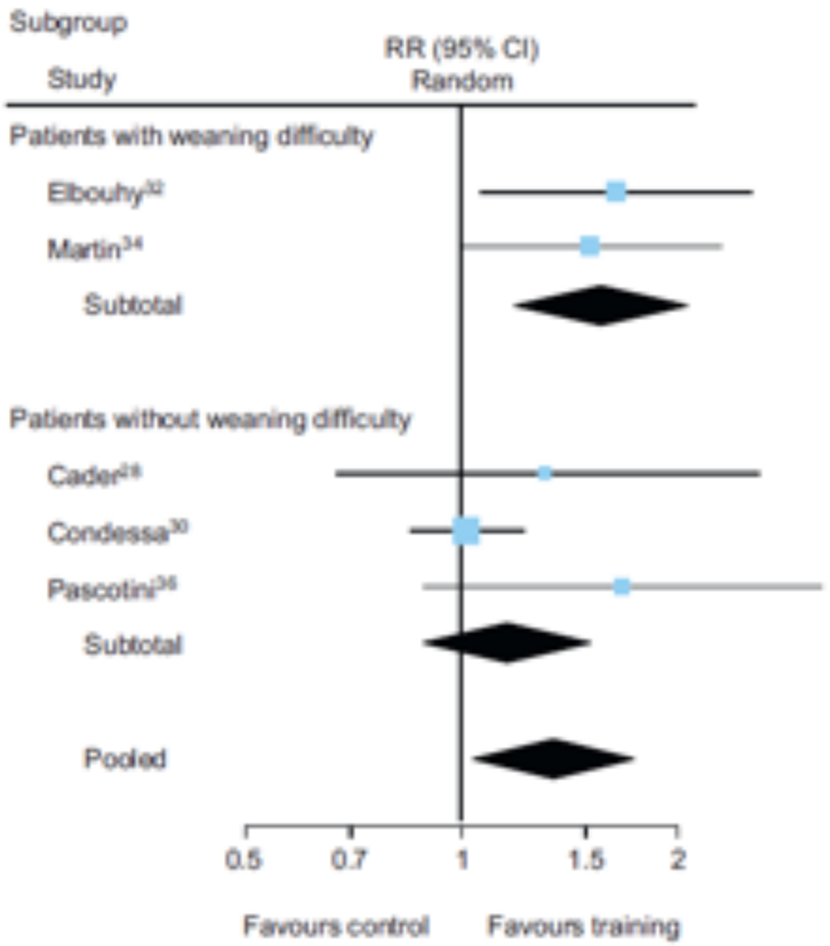
journal homepage: www.elsevier.com/locate/jphys

Research

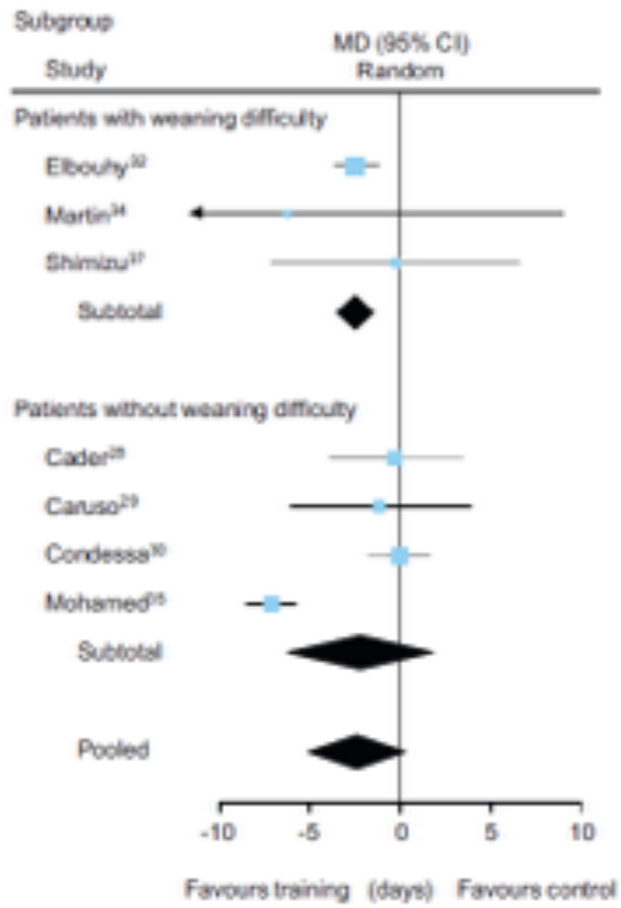
Inspiratory muscle training facilitates weaning from mechanical ventilation among patients in the intensive care unit: a systematic review

Mark Elkins [a], Ruth Dentice [b]

[a]Sydney Medical School, University of Sydney; [b]Physiotherapy Department, Royal Prince Alfred Hospital, Sydney, Australia



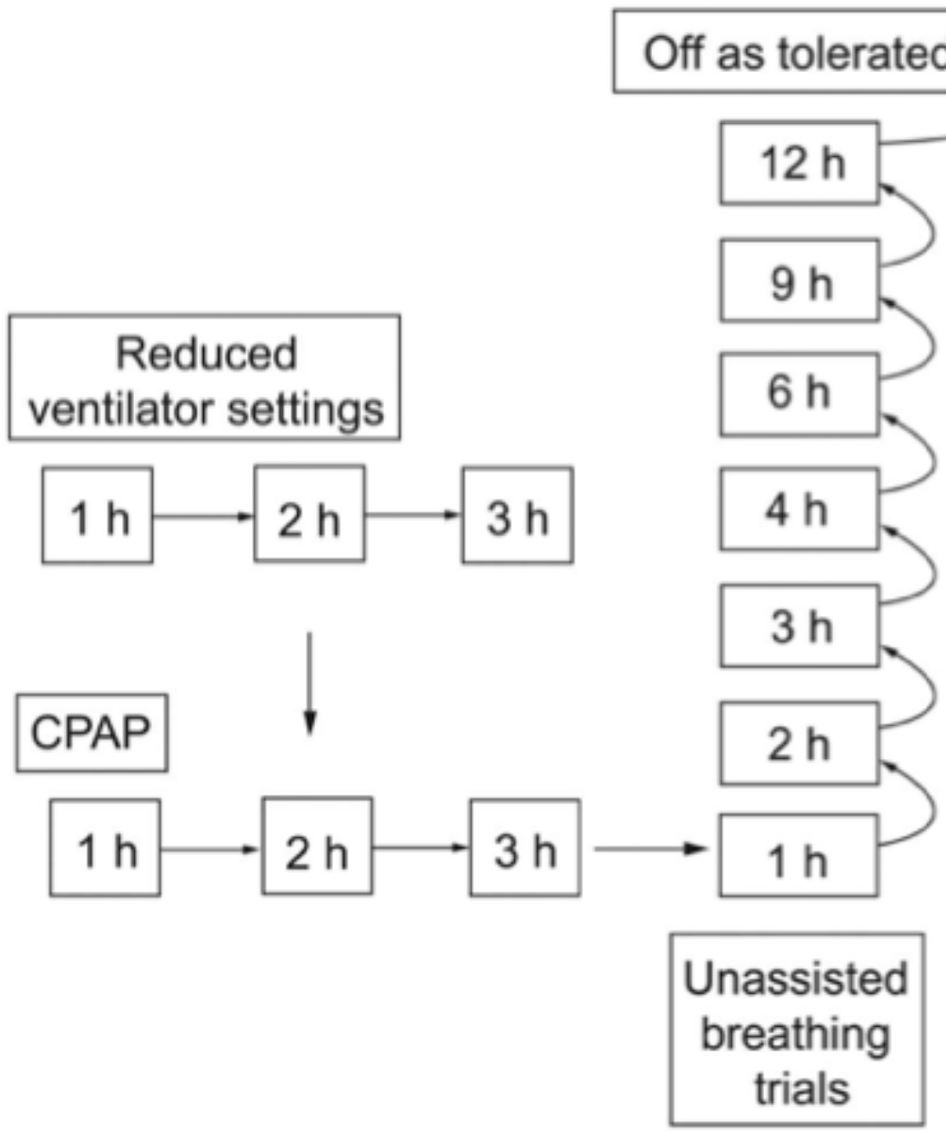
Exito weaning vs training

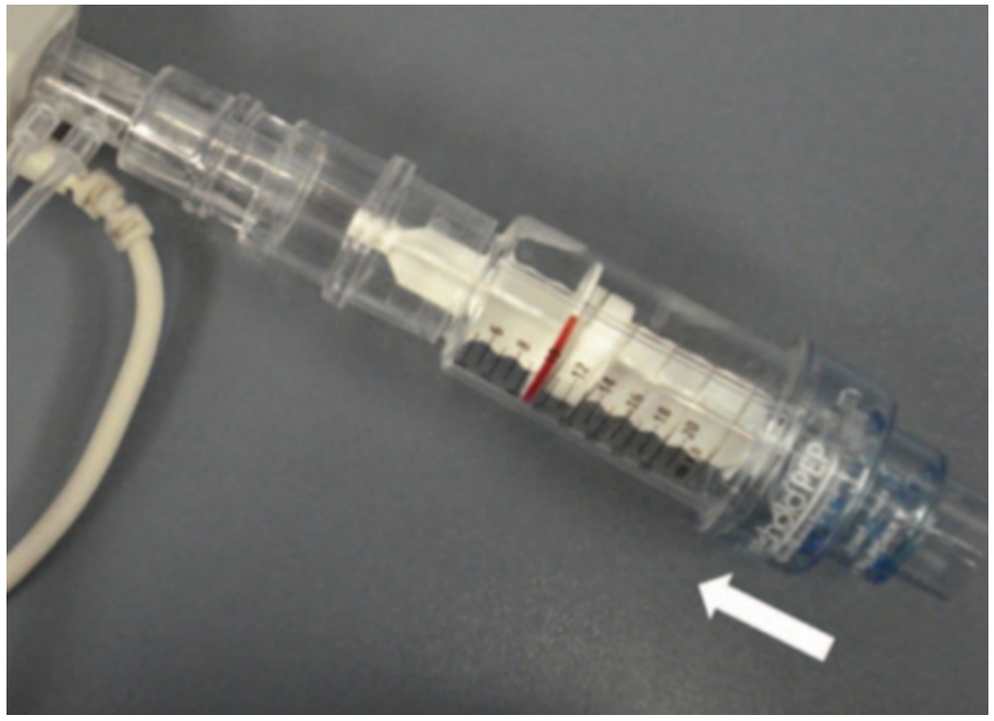


Dias de VM vs training

Effect of Training on Inspiratory Load Compensation in Weaned and Unweaned Mechanically Ventilated ICU Patients

Respir Care. 2014 January ; 59(1): 22–31. doi:10.4187/respcare.02053.





Seguridad M.T

RESEARCH Open Access

Expert consensus and recommendations on safety criteria for active mobilization of mechanically ventilated critically ill adults

Hodgson et al. Critical Care (2014) 18:658

RESPIRATORY CONSIDERATIONS	IN-BED EXERCISES	OUT-OF-BED EXERCISES
Intubation		
Endotracheal tube [a]	●	●
Tracheostomy tube	●	●
Respiratory parameters		
Fraction of inspired oxygen		
≤ 0.6	●	●
> 0.6	▲	▲
Percutaneous oxygen saturation		
≥ 90%	●	●
< 90% [b]	▲	■
Respiratory rate		
≤ 30 bpm	●	●
> 30 bpm	▲	▲
Ventilation		
Mode HFOV	▲	■
PEEP		
≤ 10 cmH_2O	●	●
> 10 cmH_2O	▲	▲
Ventilator dysynchrony [c]	▲	▲
Rescue therapies		
Nitric oxide	▲	▲
Prostacyclin	▲	▲
Prone positioning [d]	■	■

a

CARDIOVASCULAR CONSIDERATIONS	IN-BED EXERCISES	OUT-OF-BED EXERCISES
Blood pressure		
Intravenous antihypertensive therapy for hypertensive emergency [a]	■	■
MAP [b]:		
Below target range and causing symptoms	▲	■
Below target range despite support (vasoactive and/or mechanical)	▲	■
Greater than lower limit of target range while receiving no support or low level support	●	●
Greater than lower limit of target range while receiving moderate level support	▲	▲
Greater than lower limit of target range on high level support	▲	■
Known or suspected severe pulmonary hypertension	▲	▲
Cardiac arrhythmias		
Bradycardia:		
Requiring pharmacological treatment (e.g., isoprenaline) or awaiting emergency pacemaker insertion	■	■
Not requiring pharmacological treatment and not awaiting emergency pacemaker insertion	▲	▲
Transvenous or epicardial pacemaker:		
Dependent rhythm	▲	■
Stable underlying rhythm	●	●

b

Any stable tachyarrhythmia:		
Ventricular rate >150 bpm	▲	■
Ventricular rate 120 to 150 bpm	▲	▲
Any tachyarrhythmia with ventricular rate < 120 bpm	●	●
Devices		
Femoral IABP [c]	●	■
ECMO:		
Femoral [c] or subclavian (not single bicaval dual lumen cannulae)	●	■
Single bicaval dual lumen cannulae inserted into a central vein	●	▲
Ventricular assist device	●	●
Pulmonary artery catheter or other continuous cardiac output monitoring device	●	▲
Other cardiovascular considerations		
Shock of any cause with lactate >4mmol/L	▲	▲
Known or suspected acute DVT/PE	▲	▲
Known or suspected severe aortic stenosis	●	▲
Cardiac ischemia (defined as ongoing chest pain and/or dynamic EKG changes)	▲	■

IABP = intra-aortic balloon pump; ECMO = extracorporeal membrane oxygenation; bpm = beats per minute; MAP = mean arterial pressure; DVT = deep vein thrombosis; PE = pulmonary embolus.
[a] This may be a yellow (pause) for in-bed activities if the blood pressure is within target range as documented by the medical team.
[b] Experienced ICU practitioners were considered to have good judgment about the impact of cardiovascular instability and low, medium or high levels of hemodynamic support, on the ability to exercise. However, in the case of uncertainty or lack of experience, it is recommended that the decision to mobilize a patient is discussed with appropriate experienced ICU staff. The target mean arterial pressure is determined by the treating ICU team.
[c] Cycling and hip flexion may be contraindicated in the leg where the IABP/ECMO is inserted. If so, in-bed exercises may need to be modified to limit hip flexion.

NEUROLOGICAL CONSIDERATIONS	IN-BED EXERCISES	OUT-OF-BED EXERCISES
Level of consciousness		
Patient drowsy, calm or restless (e.g., RASS -1 to +1)	●	●
Patient lightly sedated or agitated (e.g., RASS -2 or +2)	▲	▲
Patient unrousable or deeply sedated (e.g., RASS <-2)	▲	■
Patient very agitated or combative (e.g., RASS >+2)	■	■
Delirium		
Delirium tool (e.g., CAM-ICU) –ve	●	●
Delirium tool +ve and able to follow simple commands	●	▲
Delirium tool +ve and not able to follow commands	▲	▲
Intracranial pressure		
Active management of intracranial hypertension, with ICP not in desired range	■	■
Intracranial pressure monitoring without active management of intracranial hypertension	●	▲
Other neurological considerations		
Craniectomy	●	▲
Open lumbar drain (not clamped)	●	■
Subgaleal drain	●	▲
Spinal precautions (pre-clearance or fixation)	■	■
Acute spinal cord injury	●	▲
Subarachnoid haemorrhage with unclipped aneurysm	●	▲
Vasospasm post-aneurysmal clipping	●	▲
Uncontrolled seizures	■	■

OTHER CONSIDERATIONS	IN-BED EXERCISES	OUT-OF-BED EXERCISES
Surgical		
Unstable/unstabilized major fracture Pelvic Spinal Lower limb long bone	▲	■
Large open surgical wound Chest/sternum[a] Abdomen[a]	●	■
Medical		
Known uncontrolled active bleeding	■	■
Suspicion of active bleeding or increased bleeding risk[b]	●	▲
Patient is febrile with a temperature exceeding acceptable maximum despite active physical or pharmacological cooling management	▲	▲
Active hypothermia management	▲	▲
Other considerations		
ICU-acquired weakness	●	●
Continuous renal replacement therapy (including femoral dialysis catheters)	●	●
Venous and arterial femoral catheters	●	●
Femoral sheaths	▲	■
All other drains and attachments, e.g., Nasogastric tube Central venous catheter Pleural drain Wound drain Intercostal catheter Urinary catheter	●	●

“Las unidades de cuidados intensivos deben poseer protocolo de movilización precoz”

Sommers. Clinical Rehabilitation 1–13 2015

Physical Therapy Volume 92 Number 12

Neth j Crit Care. Volume 15. N2. April 2011

Hodgson et al. Critical Care 2013, 17:207

Hanekom et al. Physiotherapy 99 (2013) 139–145

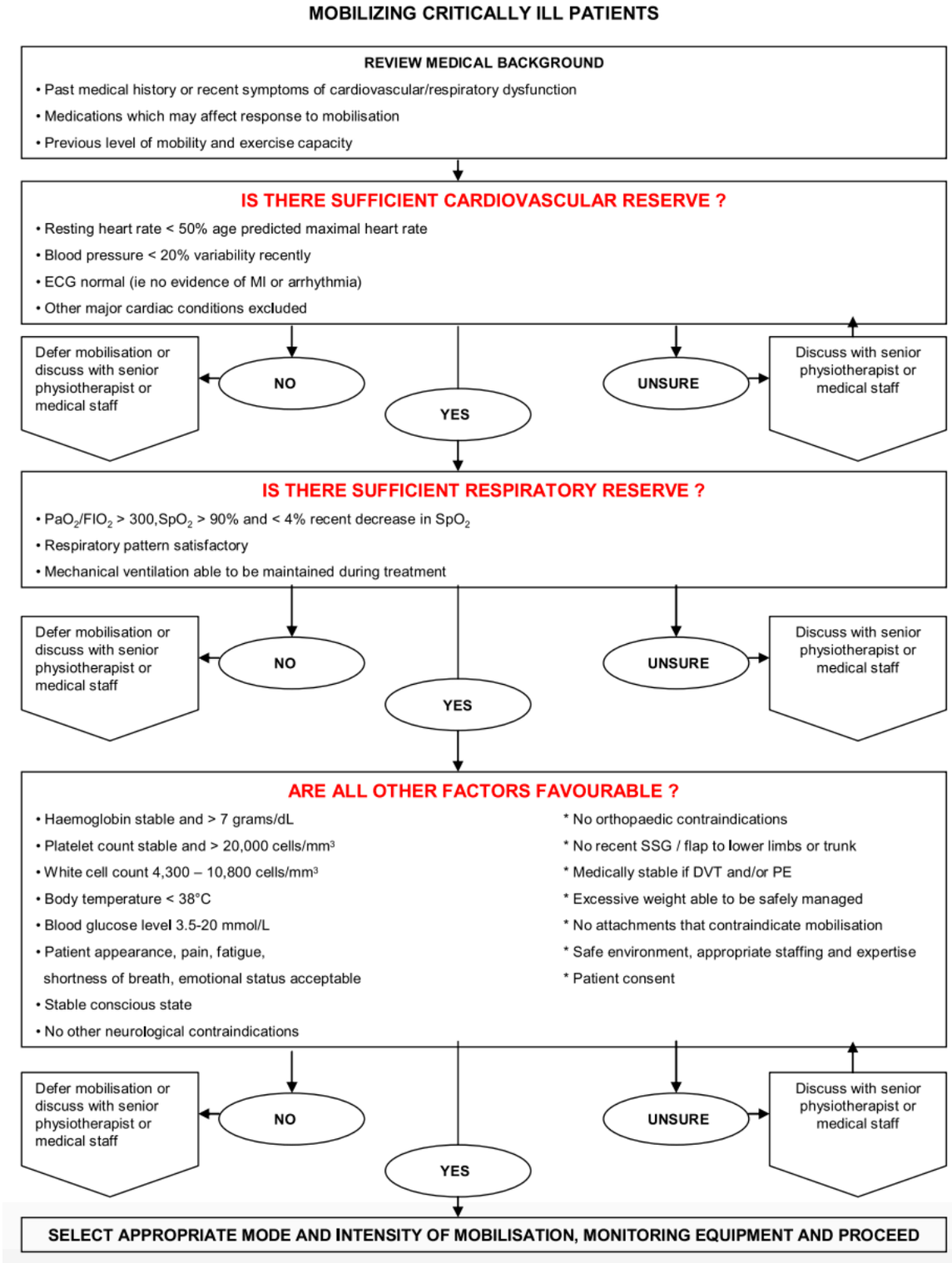
SYSTEMATIC REVIEW

Assessment of impairment and activity limitations in the critically ill: a systematic review of measurement instruments and their clinimetric properties

Pre-ICU	Admission to ICU	Time of awakening	Ward/ Rehabilitation	Return to community
Premorbid function (as determined by surrogate)	Patients unable to actively participate in assessment due to severity of illness, sedatives and/or reduced consciousness	As determined by screening criteria i.e. De Jonghe > 3/5 and CAM ICU assessment for delirium	Patient is no longer critically ill requiring intensive care unit level of care	Patient reintegration back into society, community and family roles
IMPAIRMENT				
	Ultrasound Bioimpedance spectroscopy NCS/EMG	Ultrasound MRC sum-score* HGD* / HHD Frailty scales	HGD HHD 5 times sit to stand	
ACTIVITY LIMITATION				
Katz ADL Lawton IADL Clinical Frailty scale Functional comorbidity index Charlson Comorbidity index		***Functional mobility*** PFIT-s. FSS-ICU, CPAx ***Physical Activity*** Movement sensor technologies to monitor physical activity	TUG test, DEMMI, SPPB Frailty scales 6MWT, 10MWT Movement sensor technologies	***Mobility and Balance*** 6MWT, ISWT, ESWT DEMMI, SPPB, Berg Balance Scale Elderly mobility scale Movement sensor technologies, physical activity questionnaires
PARTICIPATION RESTRICTION				
			Barthel Index FIM	Return to work, recreational and sporting pursuits, family and community, falls risk, health system utilisation, quality of life, satisfaction questionnaires

Selena Parry, et al. Intensive Care Med. 2015

Physiotherapy for adult patients with critical illness: recommendations of the European Respiratory Society and European Society of Intensive Care Medicine Task Force on Physiotherapy for Critically Ill Patients



Goselink et al. Intensive Care Med. 2008

Physiotherapy in the intensive care unit: an evidence-b REVIEW driven, practical sta rehabilitation reco

Juultje Sommers[1], Raoul HH Engelbert[1,2], Daniela Dettling-Ihnenfeldt[1], Rik Gosselink[3], Pe Spronk[4], Frans Nollet[1] and Marike van der Sch

Physiotherapy in the Intensive Care Unit

R Gosselink, B Clerckx, C Robbeets, T Vanhullebusch

Non-responsive and non-cooperative pati

- RASS Score < -2 (level 2)
- S5Q < 3 (level 4)

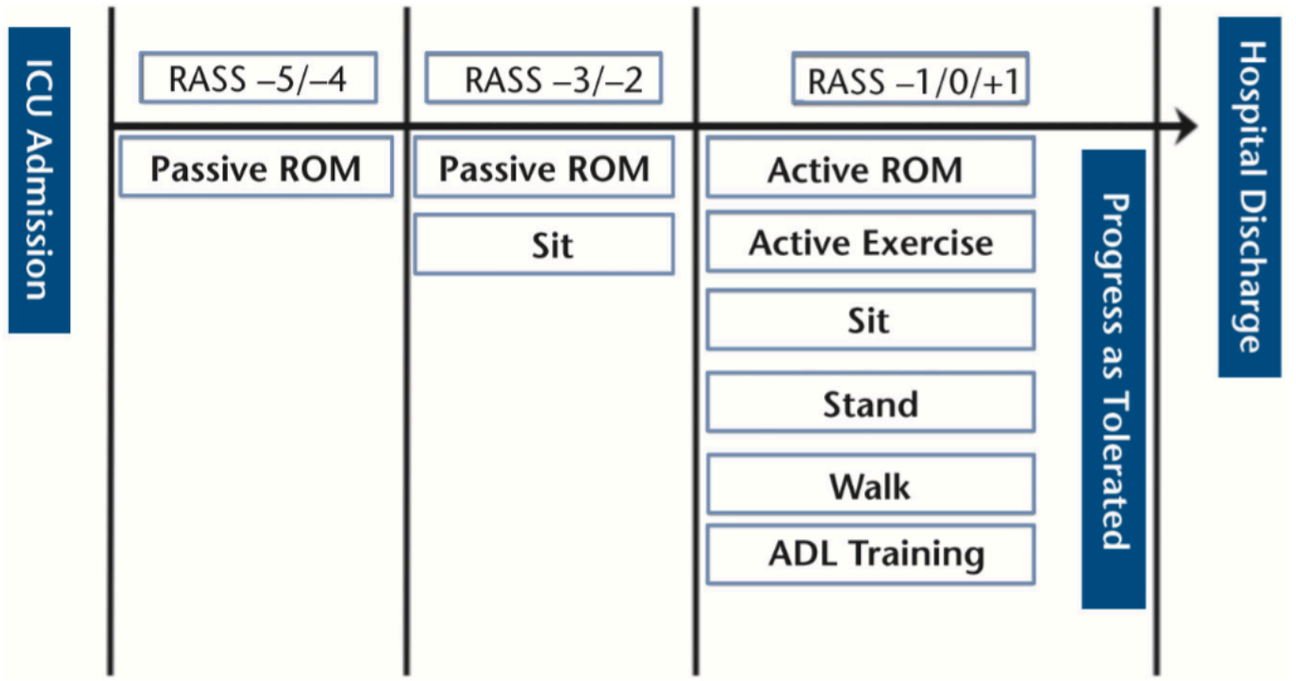
Passive (Note 3)

- Passive Exercise (level 2)
  - Repetitions: 5 times/joint
  - Sets: 1
  - Frequency: Once daily
- Stretching (level 2)
  - Duration: 20 minutes
- Passive cycling (level 2)
  - Duration: 20 minutes
- EMS (level 1 and 2)
  - Duration: 60 minutes
  - Intensity: 45 Hz
  - Frequency: Daily
- CPM (level 2)
  - 3 x 3 hours daily
- Splinting (level 4)
  - Duration: 2 hours on and 2 hours c

LEVEL 0	LEVEL 1	LEVEL 2	LEV
NO COOPERATION S5Q[1] = 0	NO LOW COOPERATION S5Q[1] < 3	MODERATE COOPERATION S5Q[1] 3	CLOSE COOP S5
FAILS BASIC ASSESSMENT[2]	PASSES BASIC ASSESSMENT[3] +	PASSES BASIC ASSESSMENT[3] +	PASSES B ASSESSM
BASIC ASSESSMENT = Cardiorespiratory unstable: MAP < 60mmHg **or** FiO_2 > 60% **or** PaO_2/FiO_2 < 200 **or** RR > 30 bpm Neurologically unstable Acute surgery Temp > 40°C	Neurological or surgical or trauma condition does not allow transfer to chair	Obesity or neurological or surgical or trauma condition does not allow active transfer to chair (even if MRCsum 36)	MRCsum BBS Sit to stand = 0 +
BODY POSITIONING[4] 2hr turning	BODY POSITIONING[4] 2hr turning Fowler's position Splinting	BODY POSITIONING[4] 2hr turning Splinting Upright sitting position in bed Passive transfer bed to chair	BBS Sit to stand 0 +
PHYSIOTHERAPY: No treatment	PHYSIOTHERAPY[4] Passive range of motion Passive bed cycling NMES	PHYSIOTHERAPY[4] Passive/Active range of motion Resistance training arms and legs Passive/Active leg and/or cycling in bed or chair NMES	BBS Sit to stand 1 +

A Combined Early Cognitive and Physical Rehabilitation Program for People Who Are Critically Ill: The Activity and Cognitive Therapy in the Intensive Care Unit (ACT-ICU) Trial

Nathan E. Brummel, James C. Jackson, Timothy D. Girard, Pratik P. Pandharipande, Elena Schiro, Brittany Work, Brenda T. Pun, Leanne Boehm, Thomas M. Gill, E. Wesley Ely



Sommers. Clinical Rehabilitation 1–13 2015

Neth j Crit Care. Volume 15. N2. April 2011

Physical Therapy Volume 92 Number 12

Acreditada por
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INTERNACIONAL

CLC
CLINICA LAS CONDES

Protocolo Motor de E/I Kinésica

Objetivos de Protocolo

- Normalizar la práctica clínica
- Disminuir la variabilidad en la atención
- Mejorar la calidad de los servicios prestados
- Constituir una poderosa fuente de información y registro
- Facilitar la atención a personal de nueva incorporación

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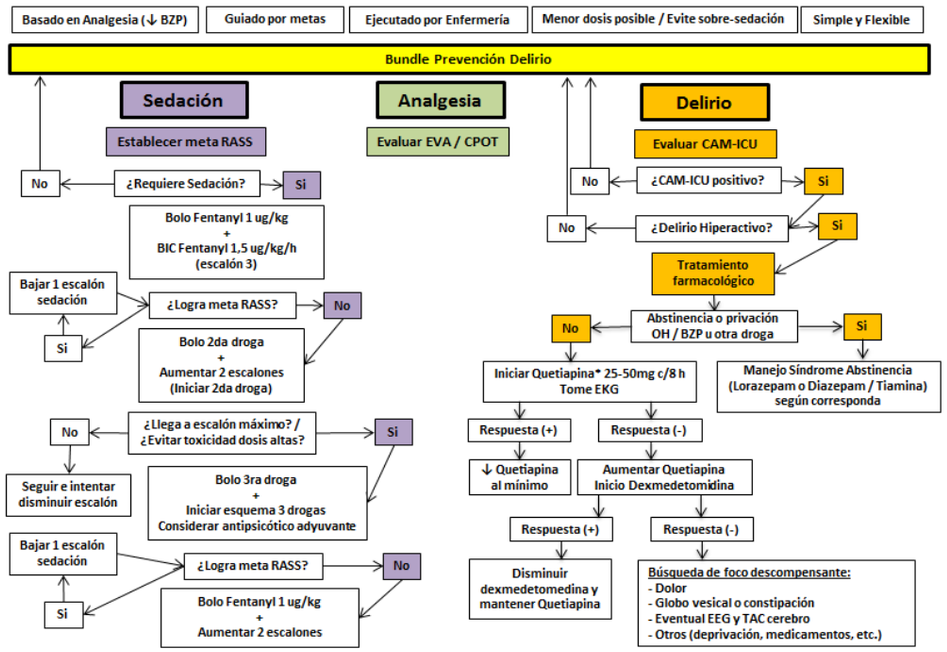
CLC CLINICA LAS CONDES

CLC CLINICA LAS CONDES	**Protocolo DAAS** **Dolor, analgesia, agitación y sedación.** **Pacientes Críticos CLC**	Versión: 2.0 Fecha Emisión: Enero 2016 Fecha Revisión: Enero 2018

PROTOCOLO DAAS

Manejo protocolizado de Delirio, Agitación, Analgesia y Sedación



ESCALON	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FENTANIL (ug/kg/h)	0,5	1,0	1,5	1,5	2,0	2,0	2,5	2,5	3,0	3,0	3,5	3,5	4,0	4,0
MIDAZOLAM (mg/kg/h)				0,04	0,04	0,06	0,06	0,08	0,08	0,10	0,10	0,12	0,12	0,14

ESCALON	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FENTANIL (ug/kg/h)	0,5	1,0	1,5	1,5	2,0	2,0	2,5	2,5	3,0	3,0	3,5	3,5	4,0	4,0
PROPOFOL (mg/kg/h)				0,5	0,5	0,8	0,8	1,0	1,0	1,5	2,0	2,5	2,5	3,0

ESCALON	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FENTANIL (ug/kg/h)	0,5	1,0	1,5	1,5	2,0	2,0	2,5	2,5	3,0	3,0	3,5	3,5	4,0	4,0
KETAMINA (mg/kg/h)				1,0	1,0	1,5	1,5	2,0	2,0	2,5	2,5	3,0	3,0	4,0

BUNDLE PREVENCIÓN DELIRIO

Objetivo	Intervenciones
Mantener ciclo sueño-vigilia	- Las luces de la unidad, en ciertas zonas estipuladas, se apagaran, durante el horario 23 hrs a 6 hrs. - Programar el máximo de actividades del paciente durante el día (curaciones, exámenes, etc), para favorecer descanso nocturno. - Evitar siestas excesivas durante día. - Evitar los ruidos excesivos (Día: 60-115dB/Noche: 30-45 dB) - Uso de tapones para los oídos de 23 hrs a 6 hrs.
Favorecer la movilidad precoz y el autocuidado	- Movilidad precoz guiada por RASS - Facilitar anteojos, audífonos y dentadura postiza, si los requiere - Evitar contenciones mecánicas
Favorecer un entorno cercano	- Recordar en forma repetitiva día, hora, lugar, quienes lo atienden. - Reloj y Calendario en Box. - Promover música en box e imágenes de seres queridos.
Inclusión de la familia en el plan diario	- Horario de visita extendido - Educación verbal, con video y tríptico ala familia.
Evitar uso benzodiazepinas	- Manejo de sedación protocolizado, disminuir uso BZP. a) Favorecer el uso de melatonina (3-6 mg/noche) o Trazodona (25-50 mg/noche) b) Evitar / tratar factores descompensantes: - Dolor, globo vesical, constipación, sed, hambre, abstinencia.

Barthel
Funcionalidad
Pre-Ingreso

ECO Muscular
Trofismo

D E S P E R T A R

S5Q
Cooperación

RASS
Sedación

CAM - ICU
Delirium

MRC
Fuerza Muscular

FSS - ICU
Funcionalidad

HANDGRIP
Fuerza Muscular

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Categoría	NIVEL 0	NIVEL 1		NIVEL 2	NIVEL 3	NIVEL 4	NIVEL 5
Cooperación	Sin cooperación S5Q = 0 RASS -5/-4	Sin Cooperación S5Q = 0 RASS -5/-4	D	Baja Cooperación S5Q < 3 RASS -3/-2	Moderada Cooperación S5Q 4/5 RASS -1/0	Moderada Cooperación S5Q 4/5 RASS -1/0	Máxima Cooperación S5Q = 5 RASS -1/0/+1
Estabilidad	Evaluación Básica fallida	Evaluación Básica aprobada	E	Evaluación Básica aprobada	Evaluación Básica aprobada	Evaluación Básica aprobada	Evaluación Básica aprobada
Antecedente	Cardio - respiratorio inestable	Cardio - respiratorio estable	S P E	Condición neurológica, quirúrgica, traumatológica, accesos u obesidad no permite salida de la cama de forma **activa** (incluso con MRC >36)	MRC EEII > 20	MRC > 48	MRC > 48
Intervención	**Posicionamiento**	**Posicionamiento**	R	**Posicionamiento**	**Posicionamiento**	**Posicionamiento**	**Posicionamiento**
	• Sin terapia	• Cambios en decubitos • Fowler o cama - sillón	T	• SBC asistido total • Transferencia pasiva a sillón • **Tilt Table	• SBC asistido moderado • Bípedo asistido (2 personas) • Transferencia asistida a sillón • **Tilt Table	• SBC independiente • Bípedo asistio (1 personas) • Transferencia asistida a sillón	• SBC • Bípedo • Transferencia activa a sillón
	Terapia Física	**Terapia Física**	A	**Terapia Física**	**Terapia Física**	**Terapia Física**	**Terapia Física**
	• Sin terapia	• Movilización pasiva • NMES	R	• Movilización activo-asistida / activa • Mov. Cíclicos • NMES	• Movilización activa / activa-resistida • ADL • Mov. Cíclicos • NMES	• Movilización activa-resistida • ADL • Marcha asistida • **Mov Cíclicos	• Movilización activa-resistida • ADL • Marcha independiente

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	NIVEL 0	NIVEL 1		NIVEL 2	NIVEL 3	NIVEL 4	NIVEL 5
Categoría							
Cooperación	Sin cooperación S5Q = 0 RASS -5/-4	Sin Cooperación S5Q = 0 RASS -5/-4		Baja Cooperación S5Q < 3 RASS -3/-2	Moderada Cooperación S5Q 4/5 RASS -1/0	Moderada Cooperación S5Q 4/5 RASS -1/0	Máxima Cooperación S5Q = 5 RASS -1/0/+1
Estabilidad	Evaluación Básica fallida	Evaluación Básica aprobada		Evaluación Básica aprobada	Evaluación Básica aprobada	Evaluación Básica aprobada	Evaluación Básica aprobada
Antecedente	Cardio - respiratorio inestable	Cardio - respiratorio estable		Condición neurológica, quirúrgica, traumatológica, accesos u obesidad no permite salida de la cama de forma **activa** (incluso con MRC >36)	MRC EEII > 20	MRC > 48	MRC > 48
Intervención	**Posicionamiento**	**Posicionamiento**		**Posicionamiento**	**Posicionamiento**	**Posicionamiento**	**Posicionamiento**
	• Sin terapia	• Cambios en decubitos • Fowler o cama - sillón		• SBC asistido total • Transferencia pasiva a sillón • **Tilt Table	• SBC asistido moderado • Bípedo asistido (2 personas) • Transferencia asistida a sillón • **Tilt Table	• SBC independiente • Bípedo asistio (1 personas) • Transferencia asistida a sillón	• SBC • Bípedo • Transferencia activa a sillón
	Terapia Física	**Terapia Física**		**Terapia Física**	**Terapia Física**	**Terapia Física**	**Terapia Física**
	• Sin terapia	• Movilización pasiva • NMES		• Movilización activo-asistida / activa • Mov. Cíclicos • NMES	• Movilización activa / activa-resistida • ADL • Mov. Cíclicos • NMES	• Movilización activa-resistida • ADL • Marcha asistida • **Mov Cíclicos	• Movilización activa-resistida • ADL • Marcha independiente

D E S P E R T A R

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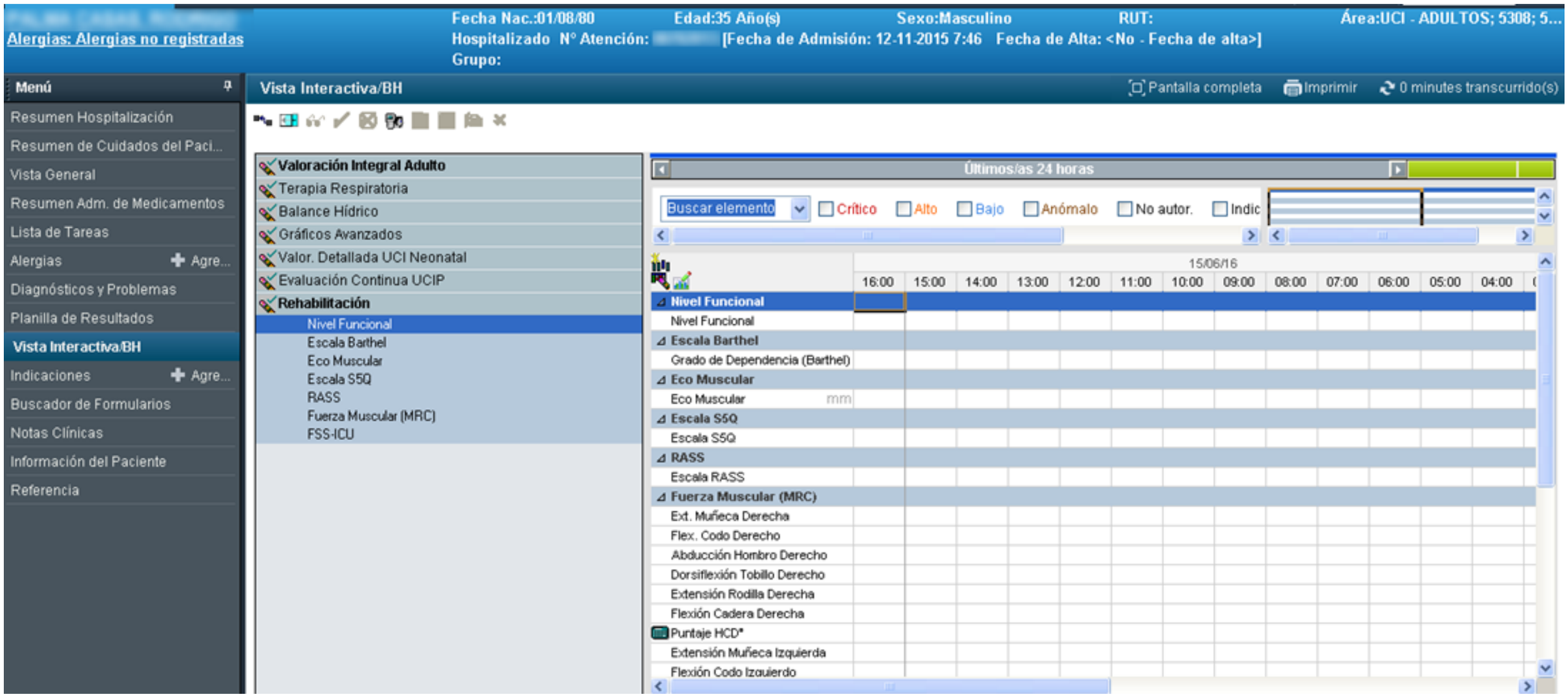
CLINICA LAS CONDES

Registro de Datos


Alergias: Alergias no registradas
Fecha Nac.:01/08/80 Edad:35 Año(s) Sexo:Masculino RUT: Área:UCI - ADULTOS; 5308; 5...
Hospitalizado N° Atención: [Fecha de Admisión: 12-11-2015 7:46 Fecha de Alta: <No - Fecha de alta>]
Grupo:
Menú
Vista Interactiva/BH
Pantalla completa
Imprimir
0 minutes transcurrido(s)
Resumen Hospitalización
Resumen de Cuidados del Paci...
Vista General
Resumen Adm. de Medicamentos
Lista de Tareas
Alergias
Agre...
Diagnósticos y Problemas
Planilla de Resultados
Vista Interactiva/BH
Indicaciones
Agre...
Buscador de Formularios
Notas Clínicas
Información del Paciente
Referencia
Valoración Integral Adulto
Terapia Respiratoria
Balance Hídrico
Gráficos Avanzados
Valor. Detallada UCI Neonatal
Evaluación Continua UCIP
Rehabilitación
Nivel Funcional
Escala Barthel
Eco Muscular
Escala S5Q
RASS
Fuerza Muscular (MRC)
FSS-ICU
Últimos/as 24 horas
Buscar elemento
Crítico
Alto
Bajo
Anómalo
No autor.
Indic
15/06/16
16:00 15:00 14:00 13:00 12:00 11:00 10:00 09:00 08:00 07:00 06:00 05:00 04:00
Nivel Funcional
Nivel Funcional
Escala Barthel
Grado de Dependencia (Barthel)
Eco Muscular
Eco Muscular mm
Escala S5Q
Escala S5Q
RASS
Escala RASS
Fuerza Muscular (MRC)
Ext. Muñeca Derecha
Flex. Codo Derecho
Abducción Hombro Derecho
Dorsiflexión Tobillo Derecho
Extensión Rodilla Derecha
Flexión Cadera Derecha
Puntaje HCD*
Extensión Muñeca Izquierda
Flexión Codo Izquierdo

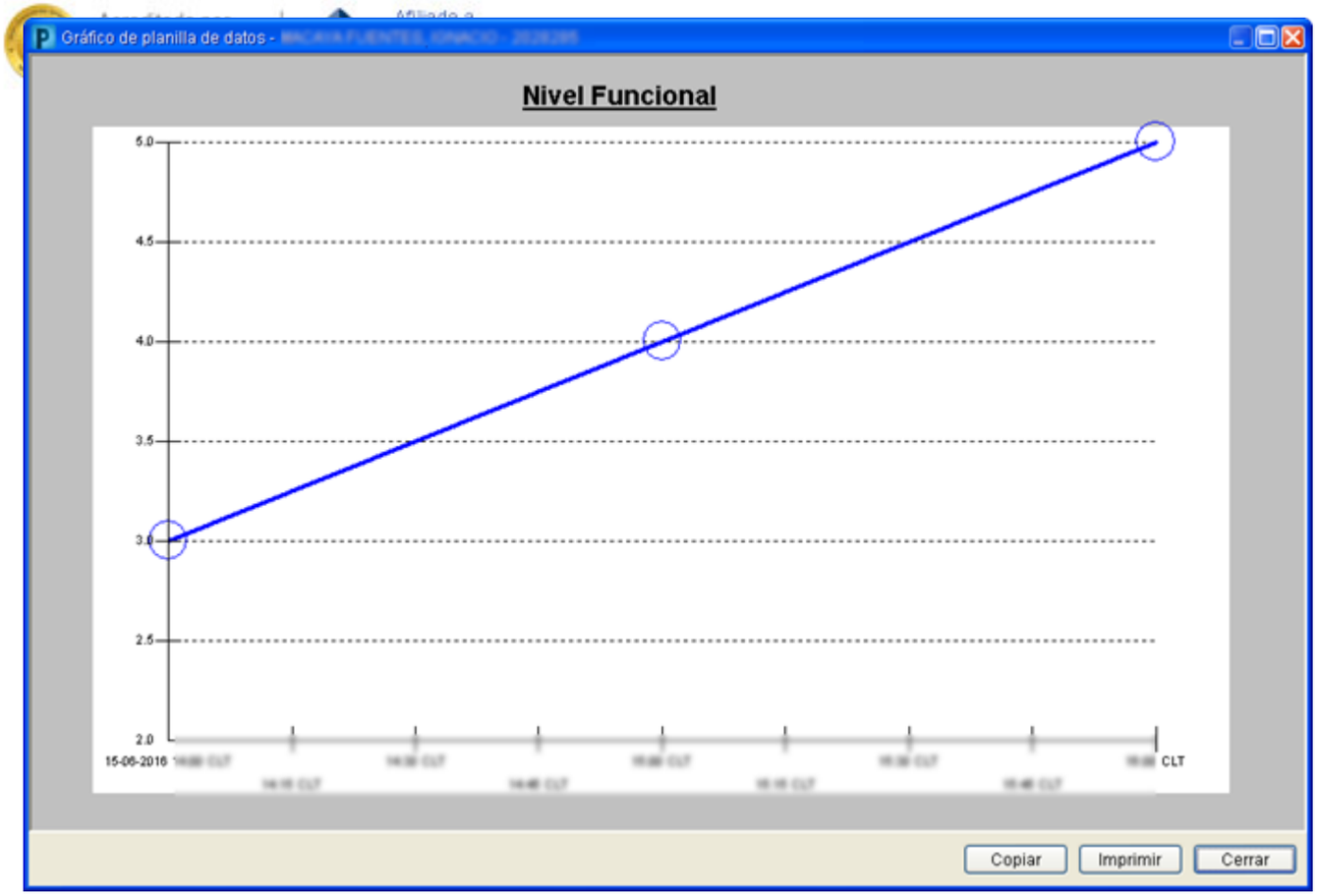


Gráfico de planilla de datos -
Nivel Funcional
5.0
4.5
4.0
3.5
3.0
2.5
2.0
15-06-2016
CLT
Copiar
Imprimir
Cerrar

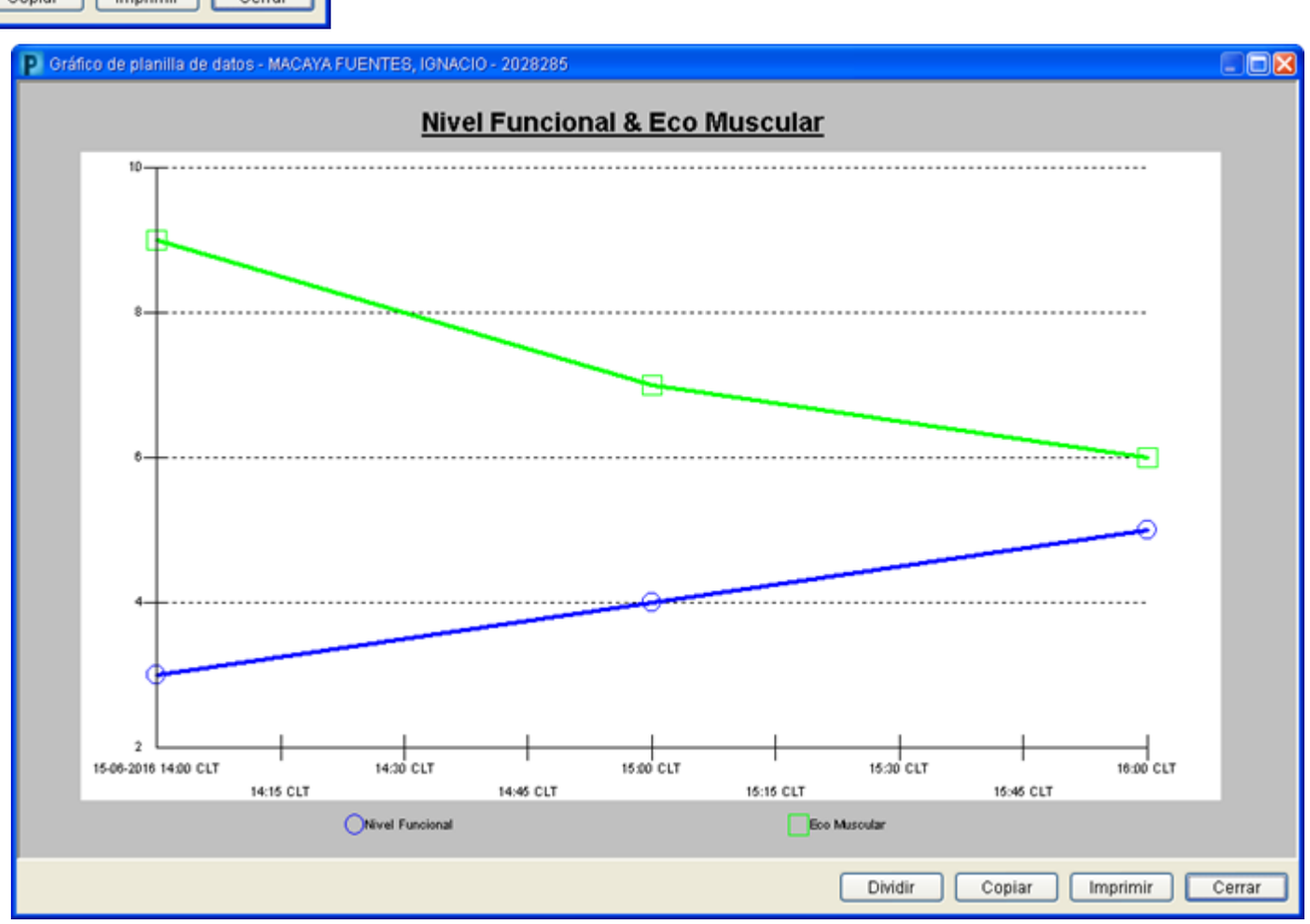
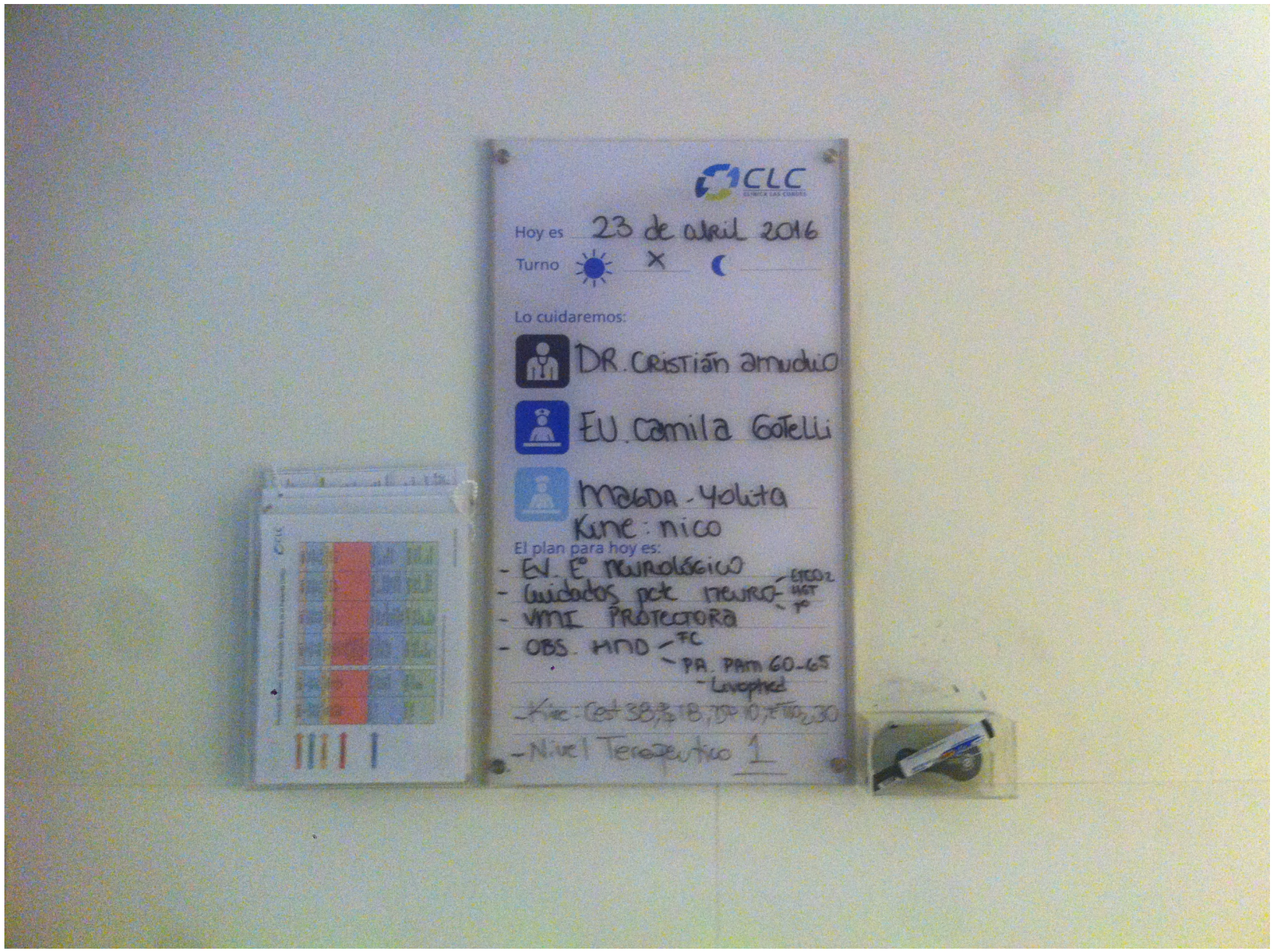


Gráfico de planilla de datos - MACAYA FUENTES, IGNACIO - 2028285
Nivel Funcional & Eco Muscular
10
8
6
4
2
15-06-2016 14:00 CLT
14:15 CLT
14:30 CLT
14:45 CLT
15:00 CLT
15:15 CLT
15:30 CLT
15:45 CLT
16:00 CLT
Nivel Funcional
Eco Muscular
Dividir
Copiar
Imprimir
Cerrar


CLC
Hoy es 23 de abril 2016
Turno X
Lo cuidaremos:
DR. Cristián Amudio
EU. Camila Gotelli
MBDA - Yolita
Kine: nico
El plan para hoy es:
- EV. Eº neurológico
- Cuidados pct neuro
- VMI PROTECTORA
- OBS. HMD - FC
- PA. PAm 60-65
- Levophed
- Nivel Terapeutico 1


REACH MOTOmed letto2


88
29
90


95
(79)
46
84

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JOHNS HOPKINS MEDICINE
INTERNACIONAL

CLC
CLINICA LAS CONDES

“Implementación de un protocolo de terapia física en una unidad de cuidados intensivos: seguridad y efectos clínicos”

Montecinos N., Adasme R., Cespedez C., Regueira T., Commentz J., Sepulveda I., Alarcon V., Martinez F., Galleguillos I., Poblete F., León C., Almendras P.

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REVIEW

Physiotherapy in the intensive care unit: an evidence-driven, practical s rehabilitation rec

Juultje Sommers[1], Raoul HH Engelbert[1,2], Daniela Dettling-Ihnenfeldt[1], Rik Gosselink Spronk[4], Frans Nollet[1] and Marike van der

Non-responsive and non-cooperative patient
- RASS Score < -2 (level 2)
- S5Q < 3 (level 4)

Passive (Note 3)
- Passive Exercise (level 2)
  - Repetitions: 5 times/joint
  - Sets: 1
  - Frequency: Once daily
- Stretching (level 2)
  - Duration: 20 minutes
- Passive cycling (level 2)
  - Duration: 20 minutes
- EMS (level 1 and 2)
  - Duration: 60 minutes
  - Intensity: 45 Hz
  - Frequency: Daily
- CPM (level 2)
  - 3 x 3 hours daily
- Splinting (level 4)
  - Duration: 2 hours on and 2 hours off

- ADL training: Balance, standing, walking (level 3)
- Out of bed mobilization (level 2)
- Cycling (level 2)
  - Duration: 20 minutes
  - Build up: Build up interval training towards 20 minutes

Sommers. Clinical Rehabilitation 1–13 2015

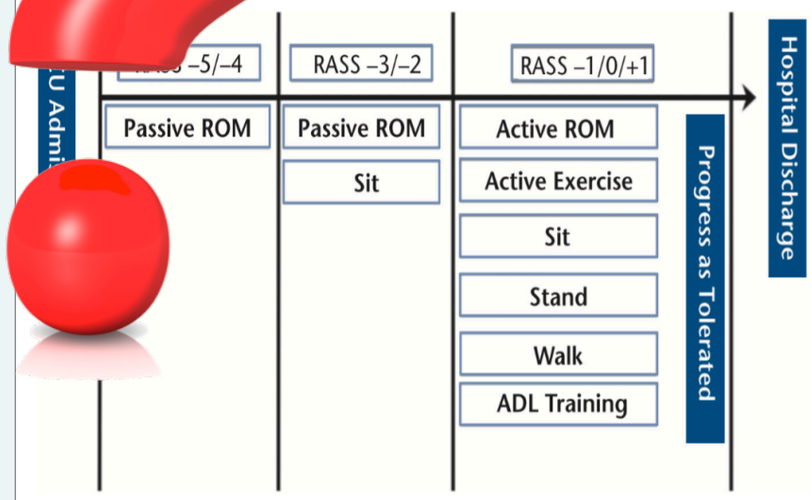
Care

	EL 4	LEVEL 5
	ULL ERATION Q[1] = 5	FULL COOPERATION S5Q[1] = 5
	ASIC IENT[3] +	PASSES BASIC ASSESSMENT[3] +
	48 + stand 0 + ing 0 + 2	MRCsum 48 + BBS Sit to stand 1 + BBS Standing 2 + BBS Sitting 3
	SITIONING[4] sfer bed to of bed ith assist	BODY POSITIONING[4] Active transfer bed to chair Sitting out of bed Standing
	HERAPY[4] ctive range	PHYSIOTHERAPY[4] Passive/Active range of motion Resistance training arms and legs Active leg and arm cycling in chair Walking (with assistance) NMES ADL
BODY POSITIONING[4] 2hr turning	Passive bed cycling NMES	
PHYSIOTHERAPY: No treatment	Passive/Active range of motion Resistance training arms and legs Passive/Active leg and/or cycling in bed or chair NMES	Passive/Active range of motion Resistance training arms and legs Active leg and/or arm cycling in bed or chair NMES ADL
		of motion Resistance training arms and legs Active leg and/or arm cycling in chair or bed Walking (with assistance/frame) NMES ADL

Neth j Crit Care. Volume 15. N2. April 2011

ined Early Cognitive and bilitation Program for Critically Ill: The Activi itive Therapy in the Intens it (ACT-ICU) Trial

Natha on, Timothy D. Girard, Pr chiro, Brittany Work, , Thomas M. Gill, E. Wesley Ely



Physical Therapy Volume 92 Number 12

Objetivo del estudio

Determinar la efectividad y seguridad de la aplicación de un protocolo de evaluación e intervención motora en una unidad de cuidados intensivos de Santiago de Chile

Metodología

Estudio

Terapia. Diseño cuasiexperimental, prospectivo con control histórico, doble ciego.

Criterios

Inclusión	Exclusión
- Ingreso a UCI CLC - Indicación de KNT - Estancia en UCI > 48hrs.	- Lesión Medular - LET - Compromiso de conciencia GSW < 8

Resultados

Tabla 1 .- Características demográficas y clínicas de Grupo 1 y Grupo 2.

Características	Grupo Convencional n=154	Grupo Protocolo n=149	p value
Edad años			0,528
Media ± ds	53,1 ± 1,6	54,5 ± 1,7	
Sexo n(%)			0,241
Masculino	98 (53,6)	85 (46,4)	
Femenino	56 (46,4)	64 (53,6)	
Tipo Diagnóstico n(%)			0,395
Medico	136 (88,3)	136 (91,3)	
Quirurgico	18 (11,7)	13 (8,7)	
Diagnóstico n(%)			
Neurológico	37 (41,6)	52 (58,4)	0,025*
Sepsis/Infeccioso	5 (50)	5 (50)	0,604
Tóxico metabólico	6 (50)	6 (50)	0,592
Gastrointestinal	25 (71,4)	10 (28,6)	0,007*
Pulmonar	33 (49,2)	34 (50,8)	0,439
Oncológico	9 (64,3)	5 (35,7)	0,225
Renal	3 (42,9)	4 (57,1)	0,482
Otros	36 (52,2)	33 (37,8)	0,453
Conexión a VMI n(%)			0,929
Uso VMI	69 (44,8)	66 (44,3)	
Días en VMI p50 (p25 – p75)			0,012*
	4 (3 – 7)	2 (1 – 6)	
Días UCI p50 (p25 – p75)			0,004*
	5 (3 – 10)	3 (2 – 7)	

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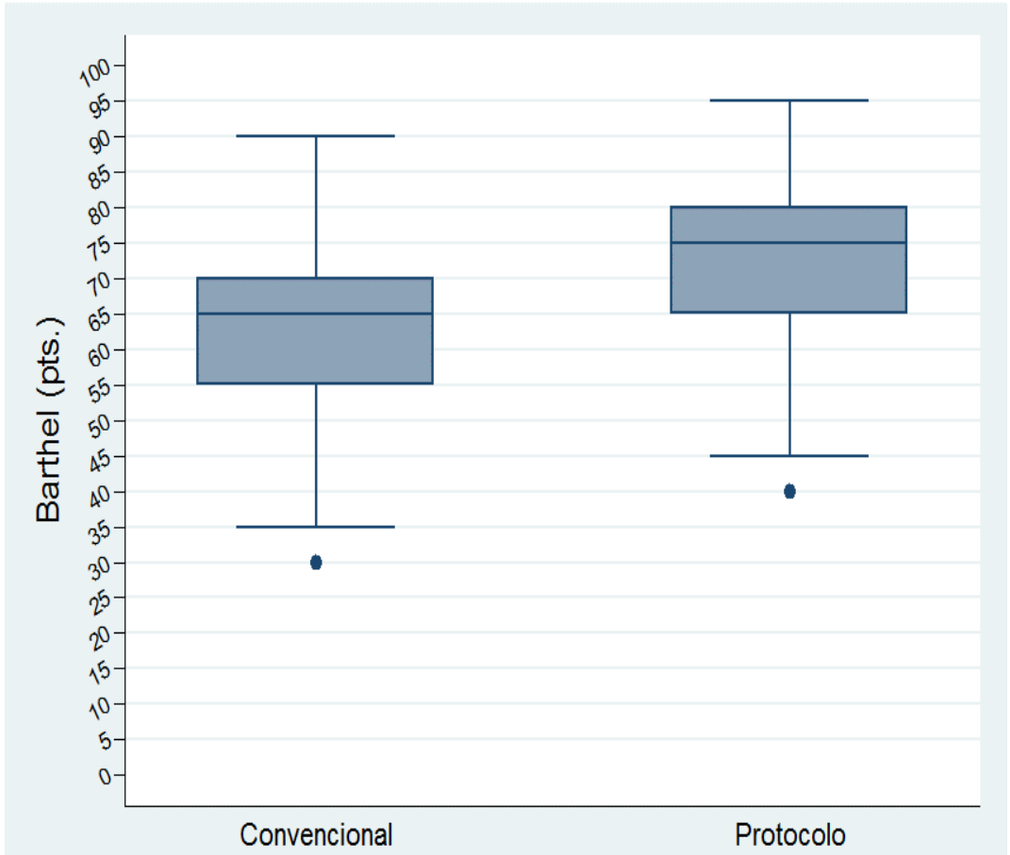
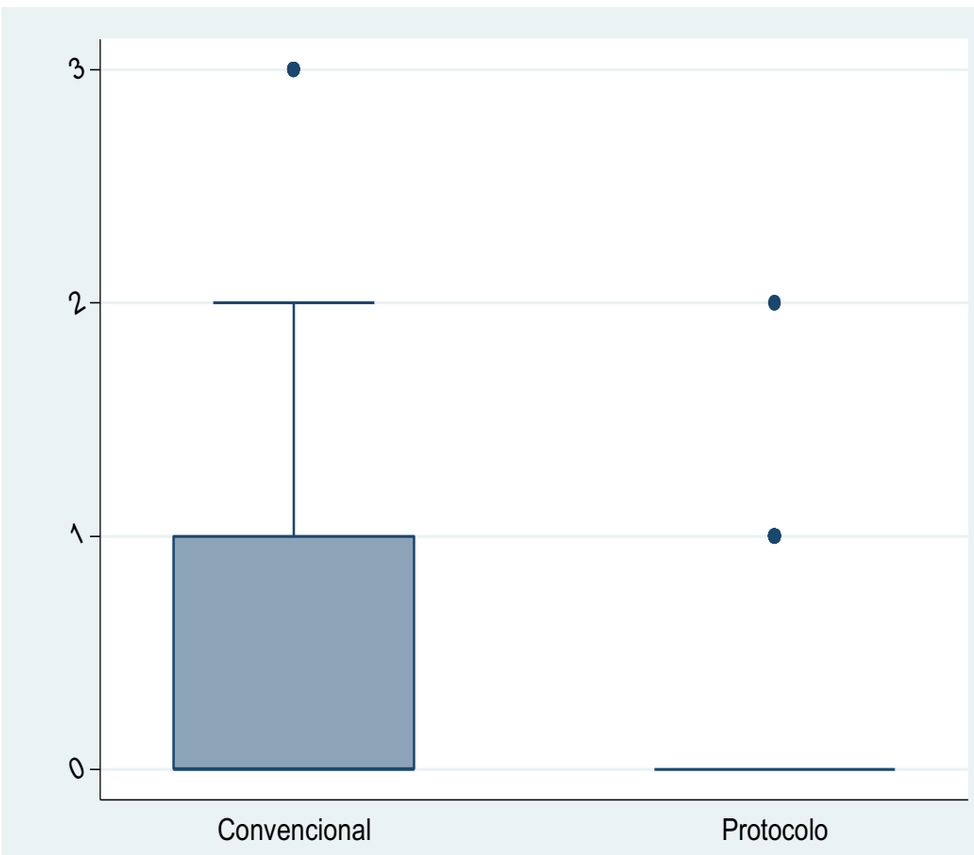
Resultados

Figurar 1.- Puntaje Barthel y Eventos adversos en Grupo 1 y Grupo 2





	Grupo Convencional n=154	Grupo Protocolo n=149	p value
Barthel p50 (p25 – p75)			P<0,001
	65 (55 – 70)	75 (65 – 80)	
Eventos Adversos n(%)			P<0,001
	49 (31,8)	14 (9,4)	
0 eventos	105 (68,2)	135 (90,6)	
1 evento	33 (21,4)	13 (8,7)	
2 eventos	10 (6,5)	1 (0,7)	
3 eventos	6 (3,9)	0 (0)	

Tabla 2 .- Modelación Multivariada de aumento de Puntaje Barthel

	OR	IC95%	p-value
No usar protocolo	0,34	1,677 - 0,596	<0,001
Edad	1,00	0,190 - 1,013	0,975
Sexo masculino	0,90	0,987 - 1,551	0,702
Tipo diagnóstico médico	0,76	0,521 - 1,920	0,557
Uso de VMI	0,11	0,298 - 0,214	<0,001
Diagnóstico			
Neurológico	1,10	0,610 - 1,976	0,755
Sepsis/Infeccioso	0,14	0,041 - 0,503	0,002
Tóxico metabólico	3,50	0,444 - 27,542	0,235
Gastrointestinal	0,88	0,395 - 1,981	0,765
Pulmonar	0,46	0,255 - 0,841	0,011
Oncológico	1,89	0,414 - 8,660	0,41
Renal	1	NA	NA
Otros	2,42	1,135 - 5,165	0,022
Días VMI	0,69	0,626 - 0,762	<0.001
Días UCI	0,80	0,755 - 0,847	<0.001

Funcionalidad

Tabla 2 .- Modelación Univariada de aumento de Puntaje Barthel

	OR	IC95%	p-value
No usar protocolo	0,32	0,136 - 0,734	0,004
Días VMI	0,77	0,697 - 0,849	<0,001
Días UCI	0,90	0,853 - 0,950	<0,001
Eventos Adversos	0,21	0,088 - 0,488	<0,001

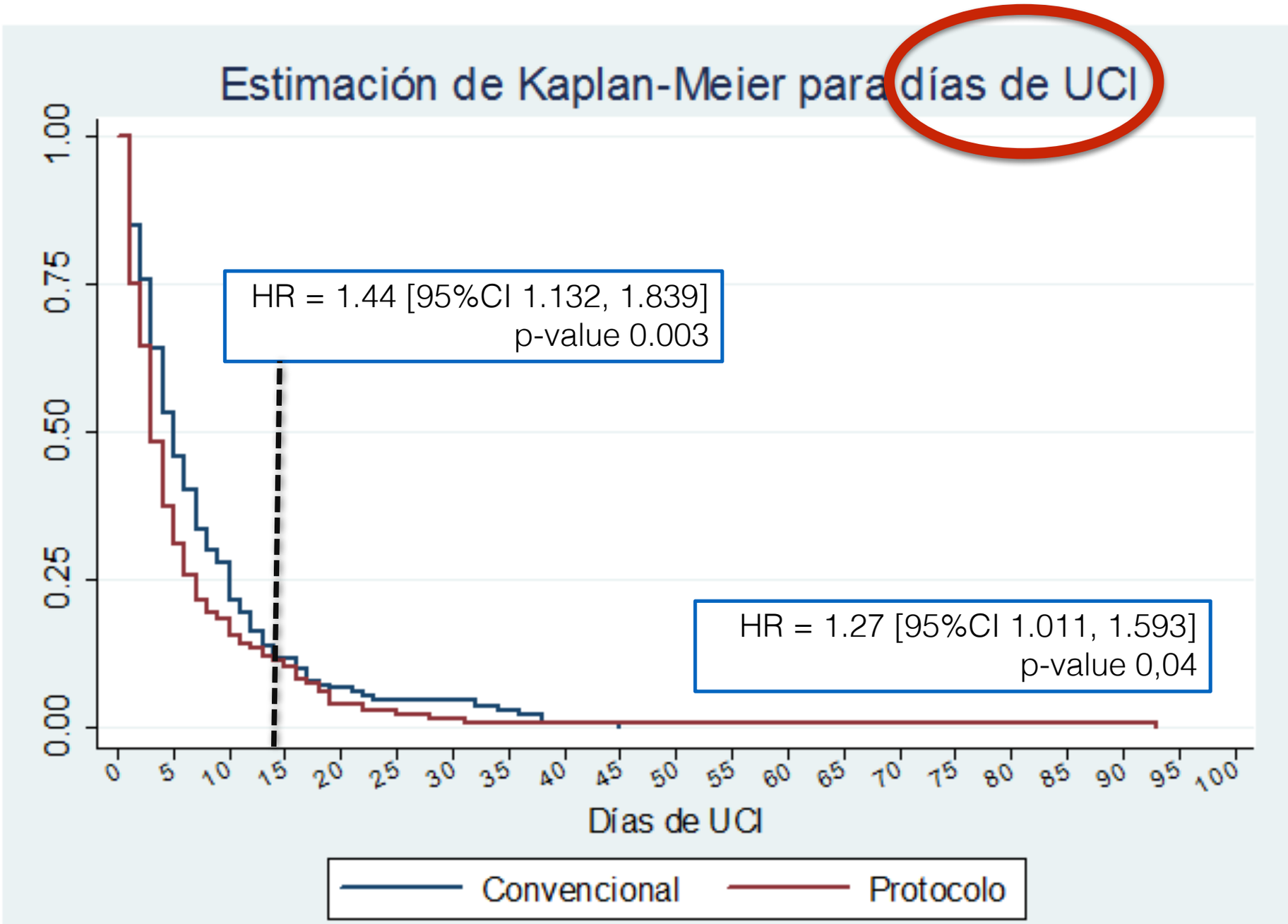
Tabla 2 .- Modelación Multivariada de Eventos Adversos

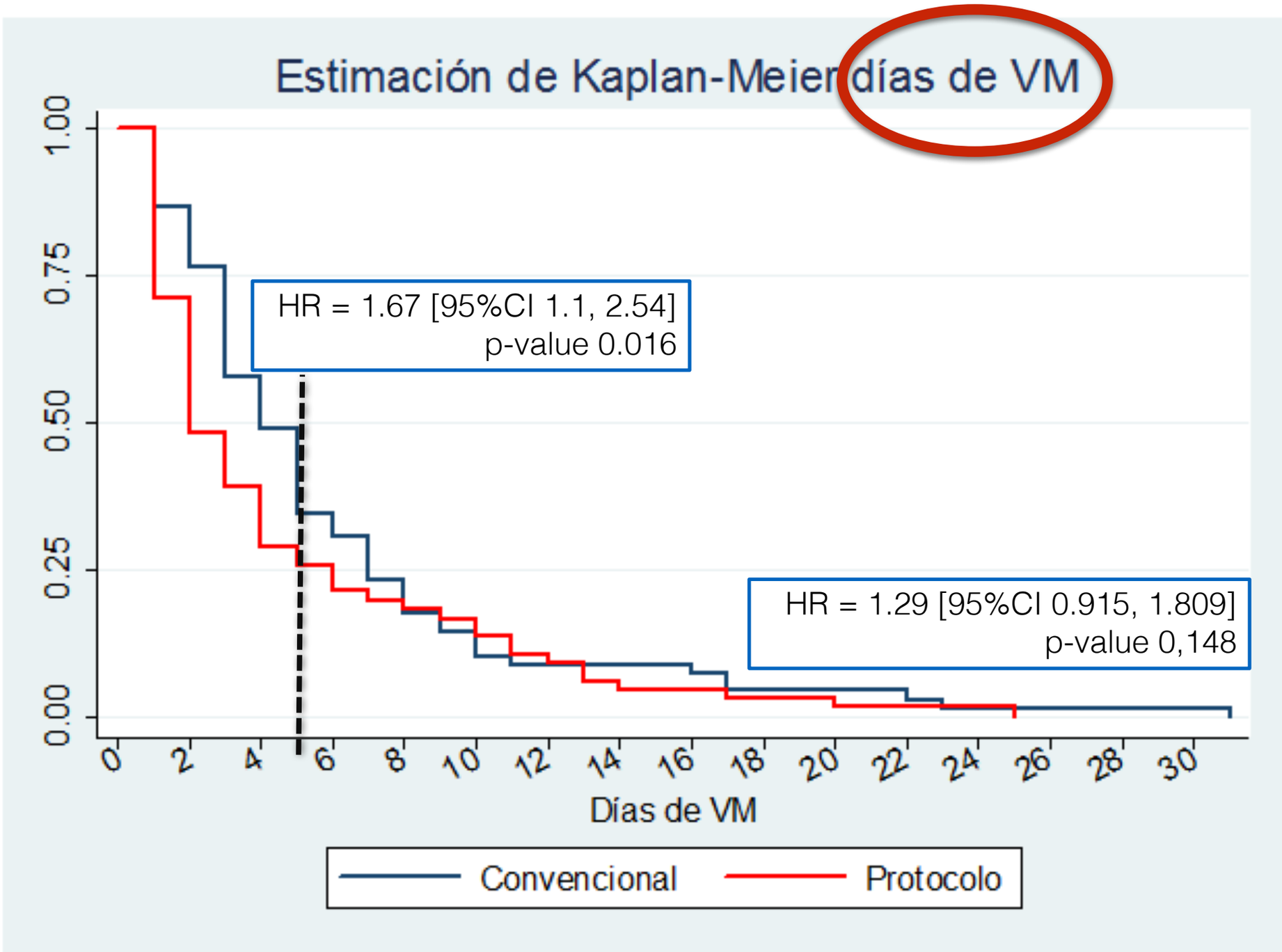
	OR	IC95%	p-value
No usar protocolo	4,50	2.358 - 8.589	<0.001
Edad	1,01	0.993 - 1.021	0,325
Sexo masculino	1,00	0.565 - 1.756	0,989
Tipo diagnóstico médico	1,11	0.433 - 2.821	0,835
Uso de VMI	6,27	3.272 - 12.005	<0.001
Diagnóstico			
Neurológico	0,95	0.516 - 1.757	0,875
Sepsis/Infeccioso	0,95	0.196 - 4.592	0,95
Tóxico metabólico	0,75	0.160 - 3.532	0,72
Gastrointestinal	2,58	1.215 - 5.461	0,014
Pulmonar	2,11	1.140 - 3.898	0,017
Oncológico	0,28	0.036 - 2.194	0,226
Renal	1,00	NA	NA
Otros	0,30	0.121 - 0.719	0,007
Días VMI	1,27	1.174 - 1.381	<0.001
Días UCI	1,34	1.248 - 1.449	<0.001

Eventos Adversos

Tabla 2 .- Modelación Univariada de Eventos Adversos

	OR	IC95%	p-value
No usar protocolo	12,18	4,051 - 36,646	<0.001
Días UCI	1,41	1,289- 1,546	<0.001


Estimación de Kaplan-Meier para días de UCI
HR = 1.44 [95%CI 1.132, 1.839]
p-value 0.003
HR = 1.27 [95%CI 1.011, 1.593]
p-value 0,04
1.00
0.75
0.50
0.25
0.00
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100
Días de UCI
Convencional
Protocolo


Estimación de Kaplan-Meier días de VM
1.00
0.75
0.50
0.25
0.00
HR = 1.67 [95%CI 1.1, 2.54]
p-value 0.016
HR = 1.29 [95%CI 0.915, 1.809]
p-value 0,148
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
Días de VM
Convencional
Protocolo

Logros

- Comunicación con el equipo
- Variabilidad inter terapeuta
- Registro de intervención
- Facilita la entrega de información (turno)
- Todos los pacientes con KNT
- ** Justificar mayor número de KIgo/cama.
- ** Extender el protocolo a todos los servicios de CLC

Conclusión

- Trastorno neuromuscular en el paciente críticamente enfermo es una condición real y descrita dentro de la UCI.

- El manejo kinésico, con sus múltiples herramientas de evaluación y terapéuticas, aparecen como una intervención viable y efectiva en la prevención, manejo y rehabilitación de trastornos neuromusculares.

- Protocolos de evaluación e intervención kinésica han demostrado mejorar la práctica clínica.

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Gracias

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