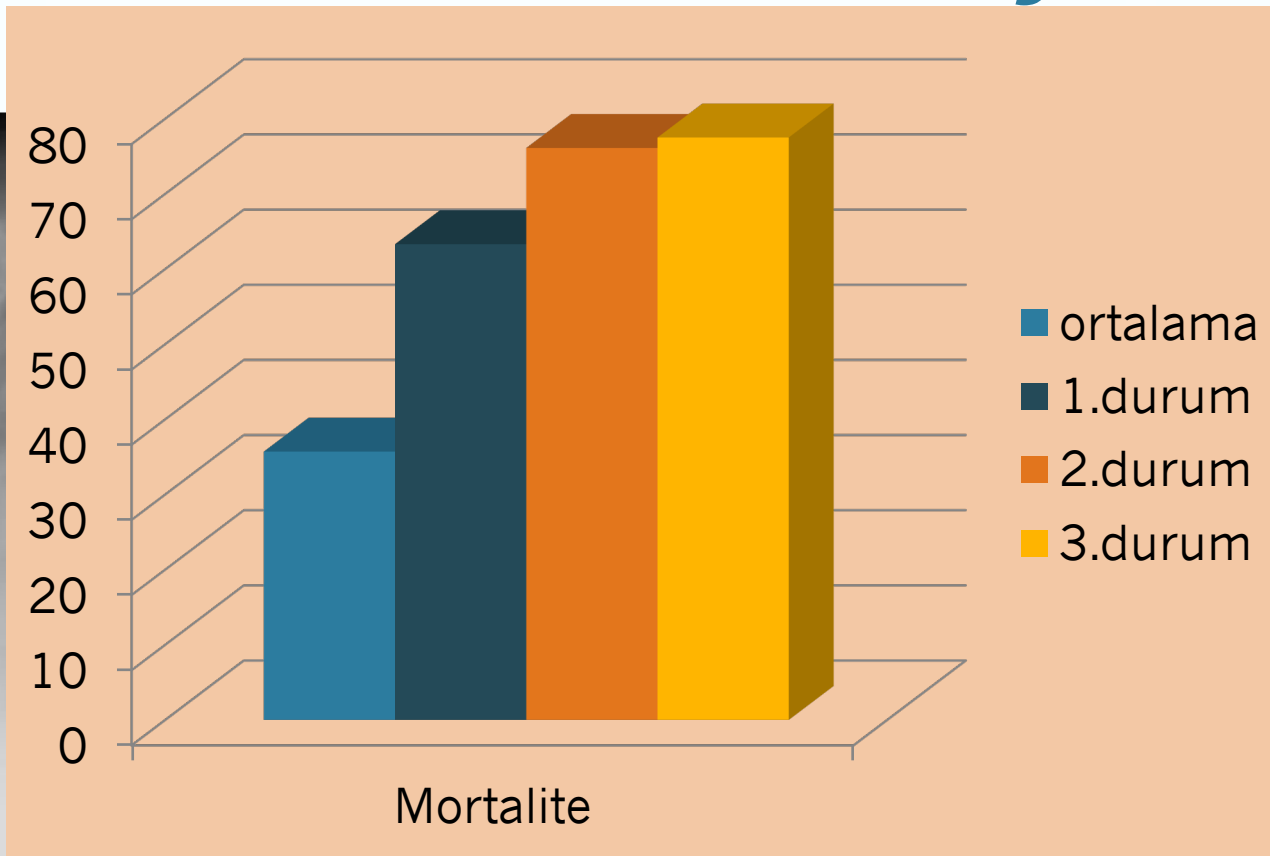
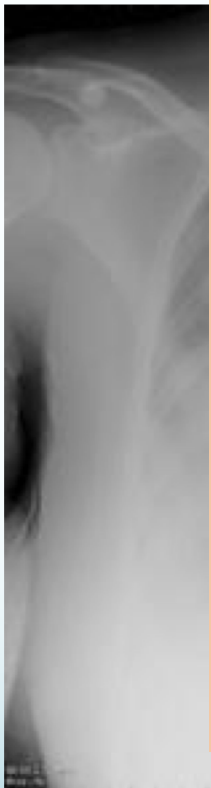


Ventilatörden ayırma sürecinin
yönetiminde
hangi kriterleri kullanalım

Biyobelirteçlerin yeri varmı

Dr. Kürşat Uzun

Mekanik ventilasyon



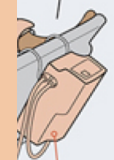
Intavenous (IV) pump: delivers fluids and medications through a line inserted into a vein.

Feeding pump: provides liquid nutrition to the stomach through an Enteroflex tube.

Enteroflex tube: a small tube placed through the nose into the stomach; provides nutrition or moves contents from stomach.

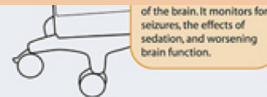
Intracranial pressure (ICP) monitors: measures pressure inside the skull.

Hemedex monitor: measures cerebral blood flow in specific areas of the brain.



Compression boots: prevent blood clots from forming in the leg veins by periodically squeezing the leg muscles.

Restraints: soft cloth ties hold the patient's arms to prevent the patient from pulling out tubes.

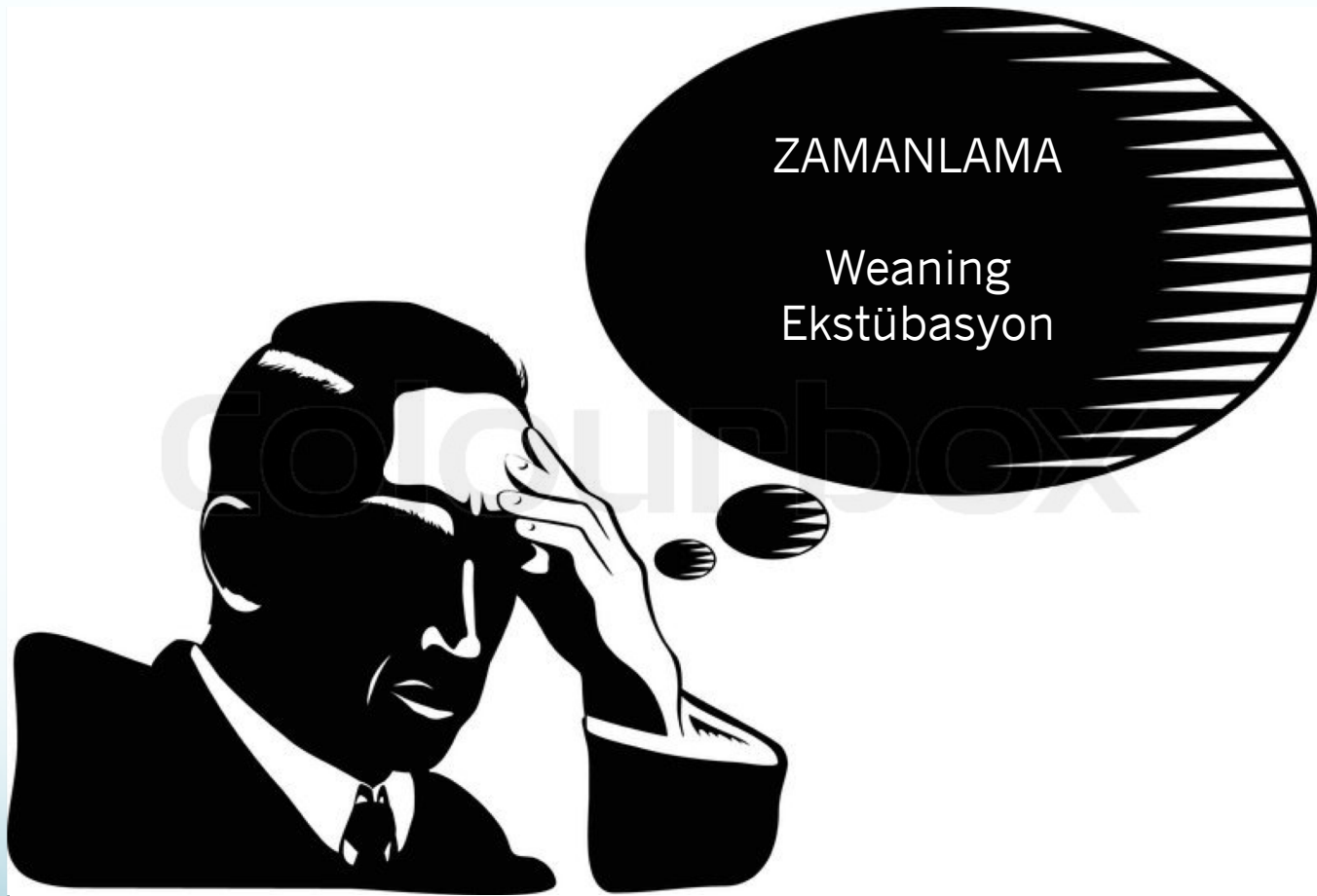


Brain monitor: of the brain. It monitors for seizures, the effects of sedation, and worsening brain function.

Oxygen level: oxygen level.

Foley catheter: a tube inserted into the bladder to collect and measure urine.

Weaning

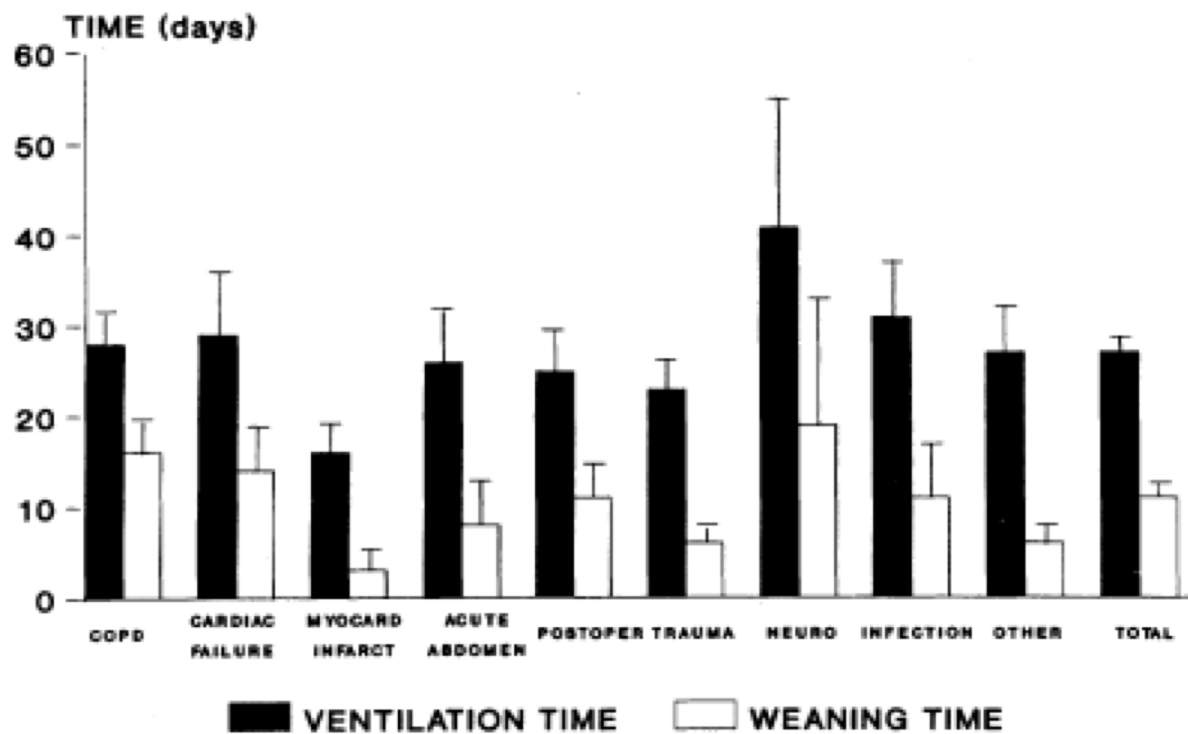


As a rule, weaning should start as soon as possible (1965).

Modes of Mechanical Ventilation and Weaning*

A National Survey of Spanish Hospitals

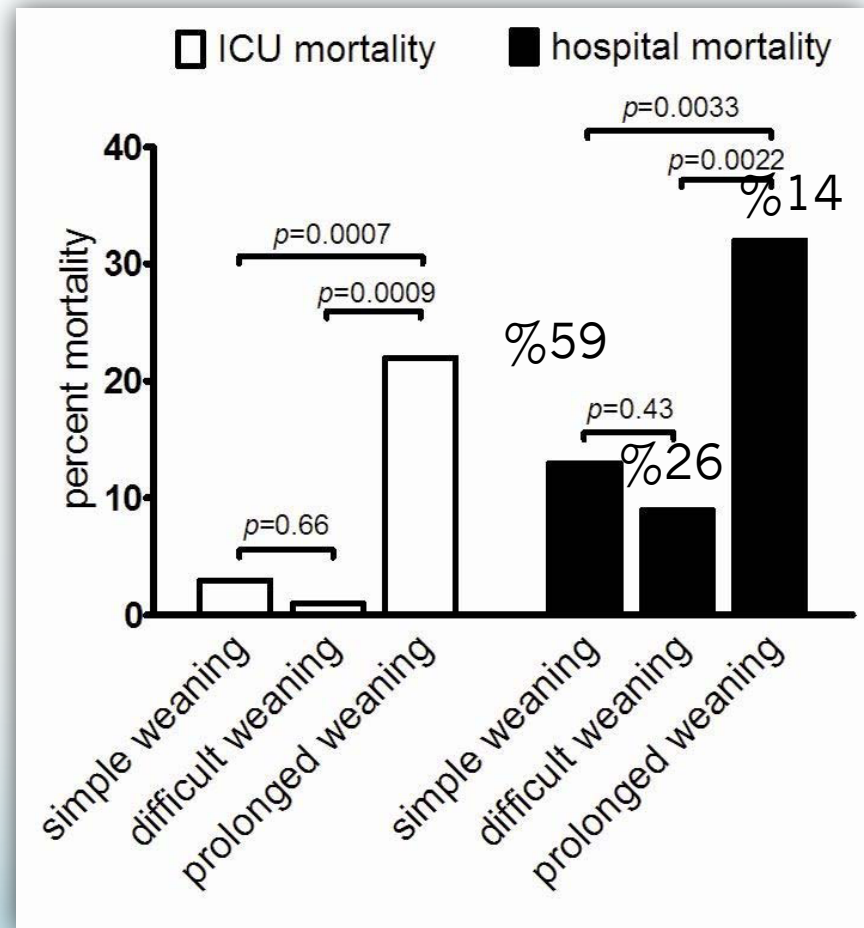
Andrés Esteban, MD, PhD; Inmaculada Alía, MD; Jordi Ibañez, MD; Salvador Benito, MD, PhD, FCCP; Martin J. Tobin, MD, FCCP; and the Spanish Lung Failure Collaborative Group†



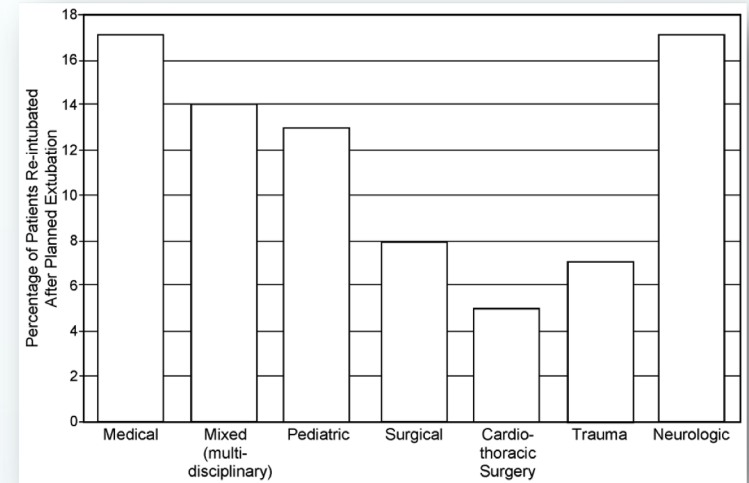
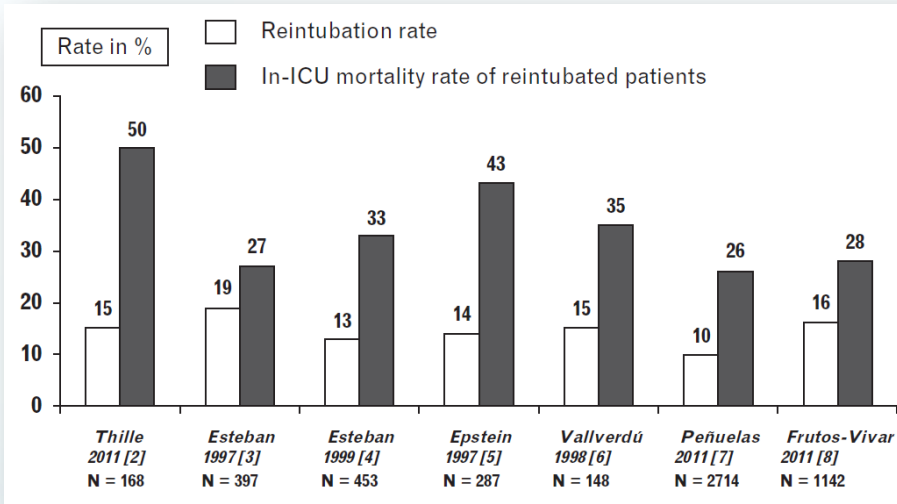
Incidence and outcome of weaning from mechanical ventilation according to new categories

G-C. Funk*, S. Anders*, M-K. Breyer*, O.C. Burghuber*, G. Edelmann#, W. Heindl*, G. Hinterholzer[†], R. Kohansal*, R. Schuster⁺, A. Schwarzmaier-D'Assie^s, A. Valentin^s and S. Hartl*

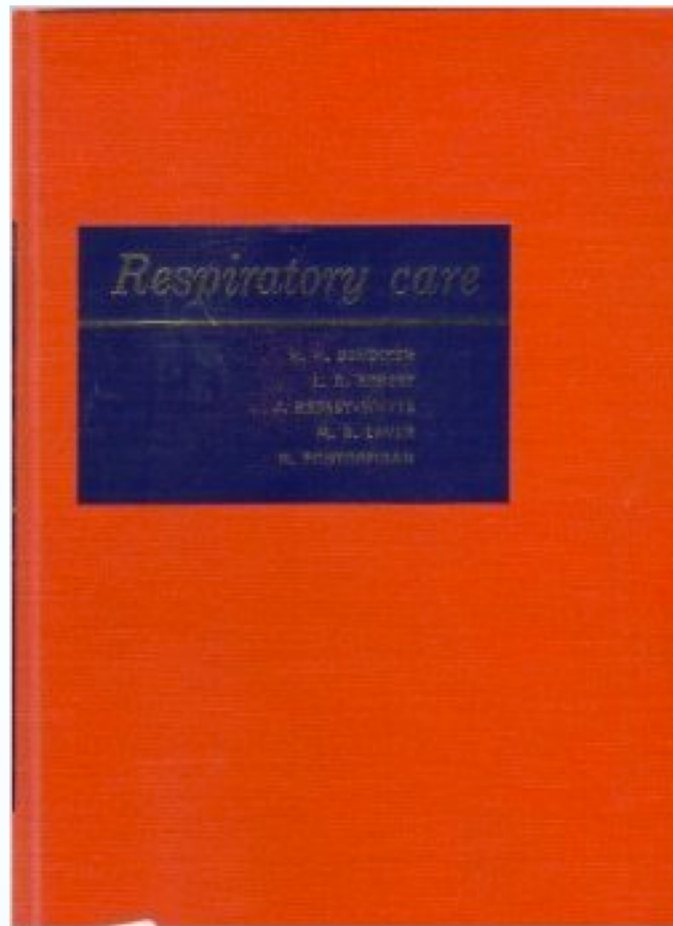
- Weaning başarısı % 70
- ilk SBT başarısızlığı ort % 21
- Total weaning yetersizliği ort % 31
- Weaning başarısızlığı
 - KOAH'da % 61
 - Nörolojik hastalarda % 41
 - Hipoksemik hastalarda % 38
- Uzamış mekanik ventilasyon
 - Yoğun bakım kaynaklarının %37-50'i



Reentübasyon



- Ekstübe olanların %15'i 48 saat içinde tekrar MV'ye bağlanma
- Reentübasyon 2.5-10 kat ölüm oranı artıyor

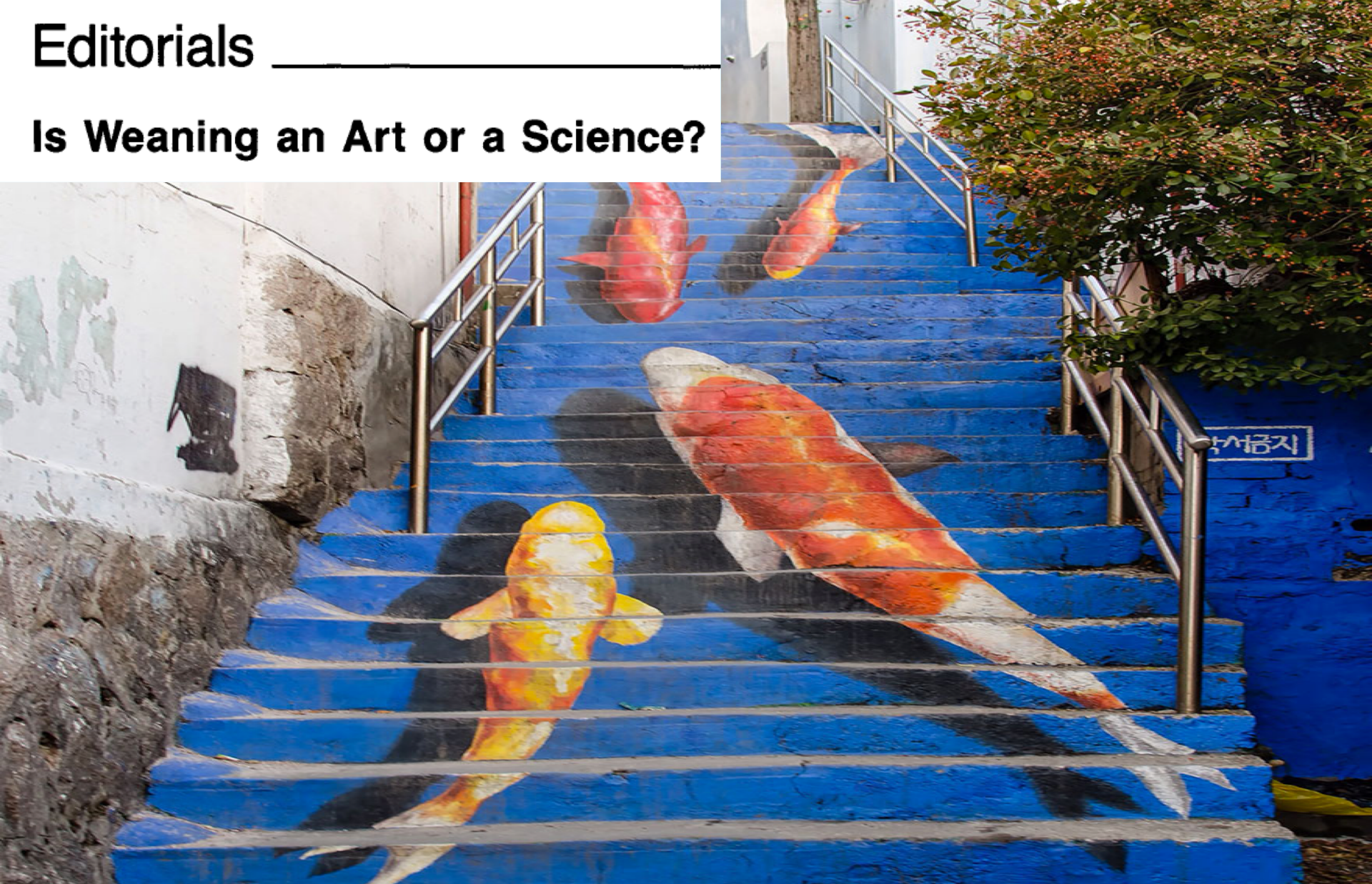


***To know the proper timing and rate
of weaning from the respirator
requires considerable
judgment and experience***

Bendixen HH, Egbert LD, Hedley-
Whyte J, Laver MB, Pontoppidan H.
Respiratory care. St. Louis: Mosby, 1965:
149-50.

Editorials _____

Is Weaning an Art or a Science?



Weaning is still an art.



Contents lists available at [ScienceDirect](#)

Heart & Lung

journal homepage: www.heartandlung.org



The influence of music during mechanical ventilation and weaning from mechanical ventilation: A review



Breanna Hetland, PhD (c), BSN, RN^{a,*}, Ruth Lindquist, PhD, RN, FAAN^b,
Linda L. Chlan, PhD, RN, FAAN^c

^aSchool of Nursing, University of Minnesota, 5-140 Weaver-Densford Hall, 308 Harvard Street SE, Minneapolis, MN 55455, USA

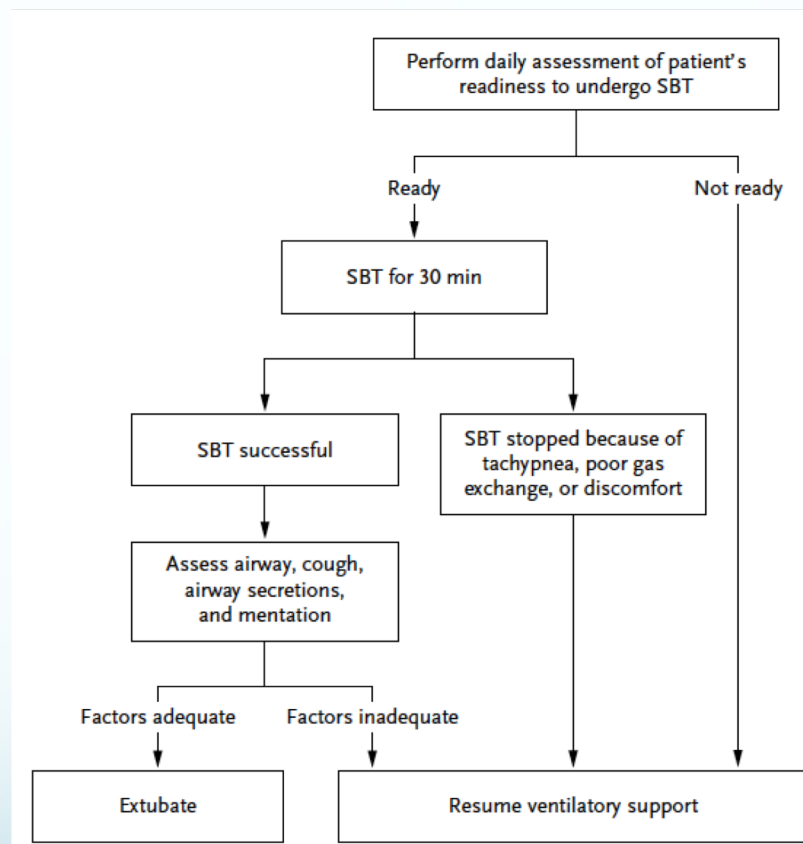
^bUniversity of Minnesota 5-140 Weaver-Densford Hall, 308 Harvard Street SE, Minneapolis, MN 55455, USA

^cCollege of Nursing, The Ohio State University, 398 Newton Hall, 1585 Neil Avenue, Columbus, OH 43210, USA



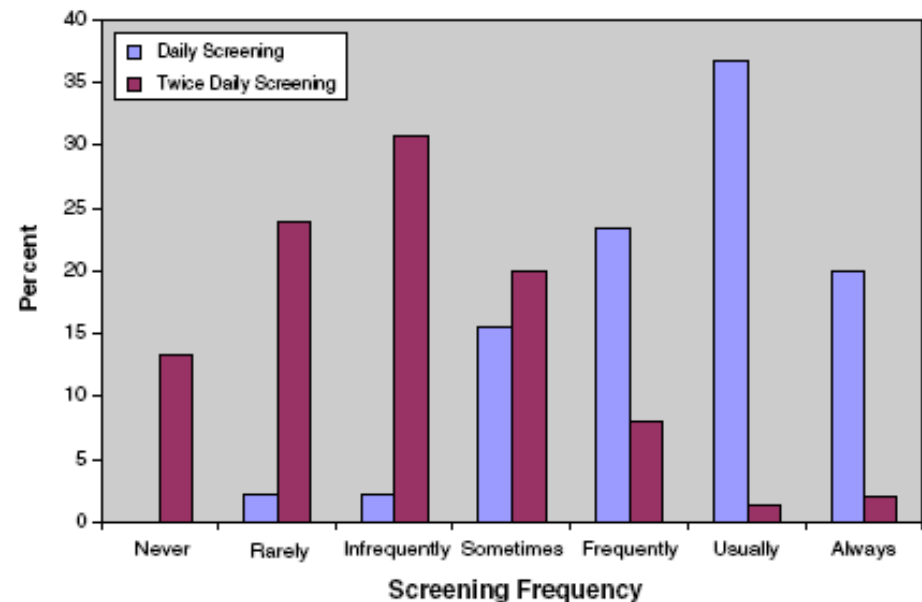
Protokol

- Altta yatan hastalığın düzelmesi
- Hemodinamik stabilite
 - Vazopressör (-)
- Oksijenasyon
 - $\text{PaO}_2/\text{FiO}_2$
 - ≥ 200
- $\text{PEEPe} \leq 5 \text{ cm H}_2\text{O}$
- $f/\text{VT} \leq 100$
- Sedasyon (-)



Weaning critically ill adults from invasive mechanical ventilation: a national survey

- %95 SBT kullanılmış
 - %70.8 PS+PEEP
 - %35.7 CPAP
 - %25 T-tüp
 - %9.4 PS (PEEP yok)
 - %8.4 T-tüp + CPAP
- PS düzeyi 5-7 cm H₂O



Comparison of Proportional Assist Ventilation Plus, T-Tube Ventilation, and Pressure Support Ventilation as Spontaneous Breathing Trials for Extubation: A Randomized Study

Sandy Nogueira Teixeira PT, Erica Fernanda Osaku PT PhD,
Claudia Rejane Lima de Macedo Costa PT PhD, Beatriz Fernandes Toccolini PT,
Nicolle Lamberti Costa PT, Maria Fernanda Cândia PT, Marcela Aparecida Leite PT,
Amaury Cezar Jorge MD MSc, and Péricles Almeida Delfino Duarte MD PhD

Table 2. Outcomes

Outcome	Total (<i>n</i> = 160)	T-Tube (<i>n</i> = 66)	PSV (<i>n</i> = 46)	PAV+ (<i>n</i> = 48)	<i>P</i>
ICU stay, mean $\pm$ SD d	11.8 $\pm$ 8.1	12 $\pm$ 8.1	11.9 $\pm$ 7.4	11.5 $\pm$ 8.9	.97
Hospital stay, mean $\pm$ SD d	25 $\pm$ 17.2	25.1 $\pm$ 16.5	27.6 $\pm$ 19.8	22.2 $\pm$ 15.4	.26
Time to re-intubation, mean $\pm$ SD h	13.3 $\pm$ 12.1	13.1 $\pm$ 11.7	10.5 $\pm$ 8.6	17.6 $\pm$ 16.9	.57
ICU mortality, <i>n</i> (%)	6 (3.7)	5 (7.6)	1 (2.2)	0	.09
Hospital mortality, <i>n</i> (%)	16 (10)	5 (7.6)	6 (13)	5 (10.4)	.63
Extubation failure, <i>n</i> (%)	24 (15)	10 (15)	8 (17)	6 (12.5)	.80
Required tracheostomy, <i>n</i> (%)	12 (7.5)	2 (3)	6 (13)	4 (8.3)	.59

PSV = pressure support ventilation

PAV+ = proportional assist ventilation plus

Protocolized versus non-protocolized weaning for reducing the duration of mechanical ventilation in critically ill adult patients (Review)

Cochrane Database of Systematic Reviews 2014,

Blackwood B, Burns KEA, Cardwell CR, O'Halloran P



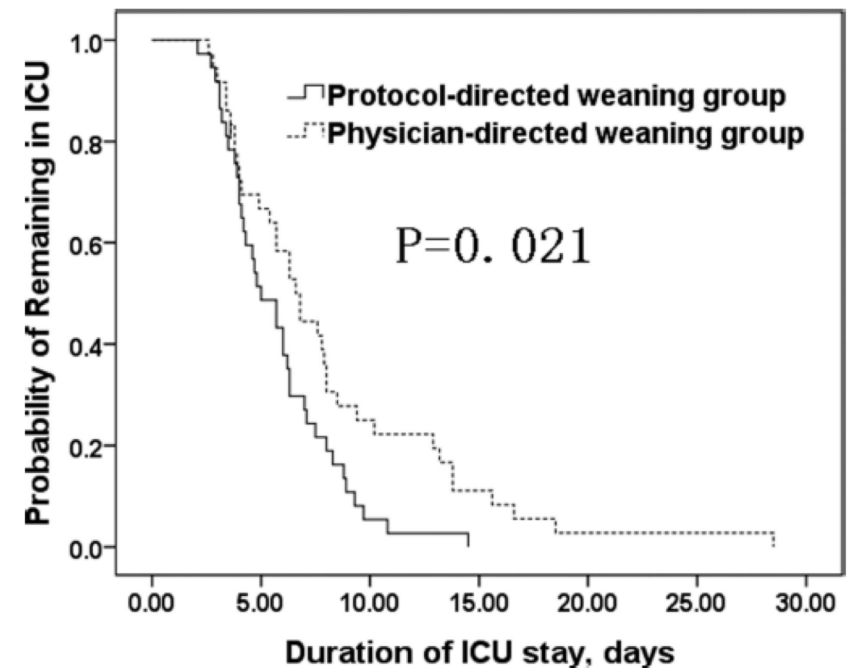
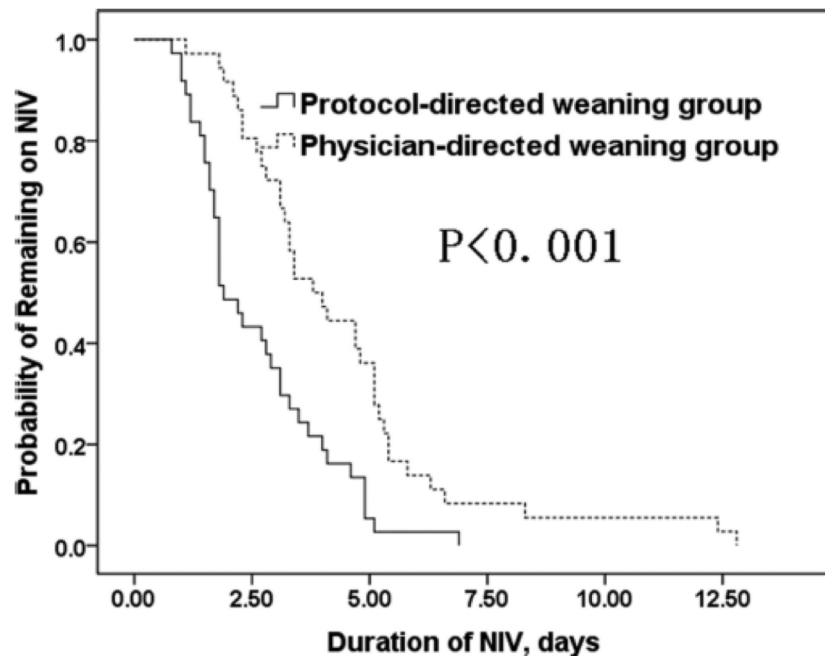
Main results

We included 17 trials (with 2434 patients) in this updated review. The original review included 11 trials. The total geometric mean duration of mechanical ventilation in the protocolized weaning group was on average reduced by 26% compared with the usual care group (N = 14 trials, 95% confidence interval (CI) 13% to 37%, $P = 0.0002$). Reductions were most likely to occur in medical, surgical and mixed ICUs, but not in neurosurgical ICUs. Weaning duration was reduced by 70% (N = 8 trials, 95% CI 27% to 88%, $P = 0.009$); and ICU length of stay by 11% (N = 9 trials, 95% CI 3% to 19%, $P = 0.01$). There was significant heterogeneity among studies for total duration of mechanical ventilation ($I^2 = 67\%$, $P < 0.0001$) and weaning duration ($I^2 = 97\%$, $P < 0.00001$), which could not be explained by subgroup analyses based on type of unit or type of approach.

MV süresi %26 nöroloji YBU hariç diğer YBU'larda azalma
Weaning süresi %70 azalıyor
YBU kalış süresi %11 azalıyor

Protocol-directed versus physician-directed weaning from noninvasive ventilation: The impact in chronic obstructive pulmonary disease patients

Jun Duan, Xiaokui Tang, Shicong Huang, Jinwei Jia, and Shuliang Guo, MD, *Chongqing, China*



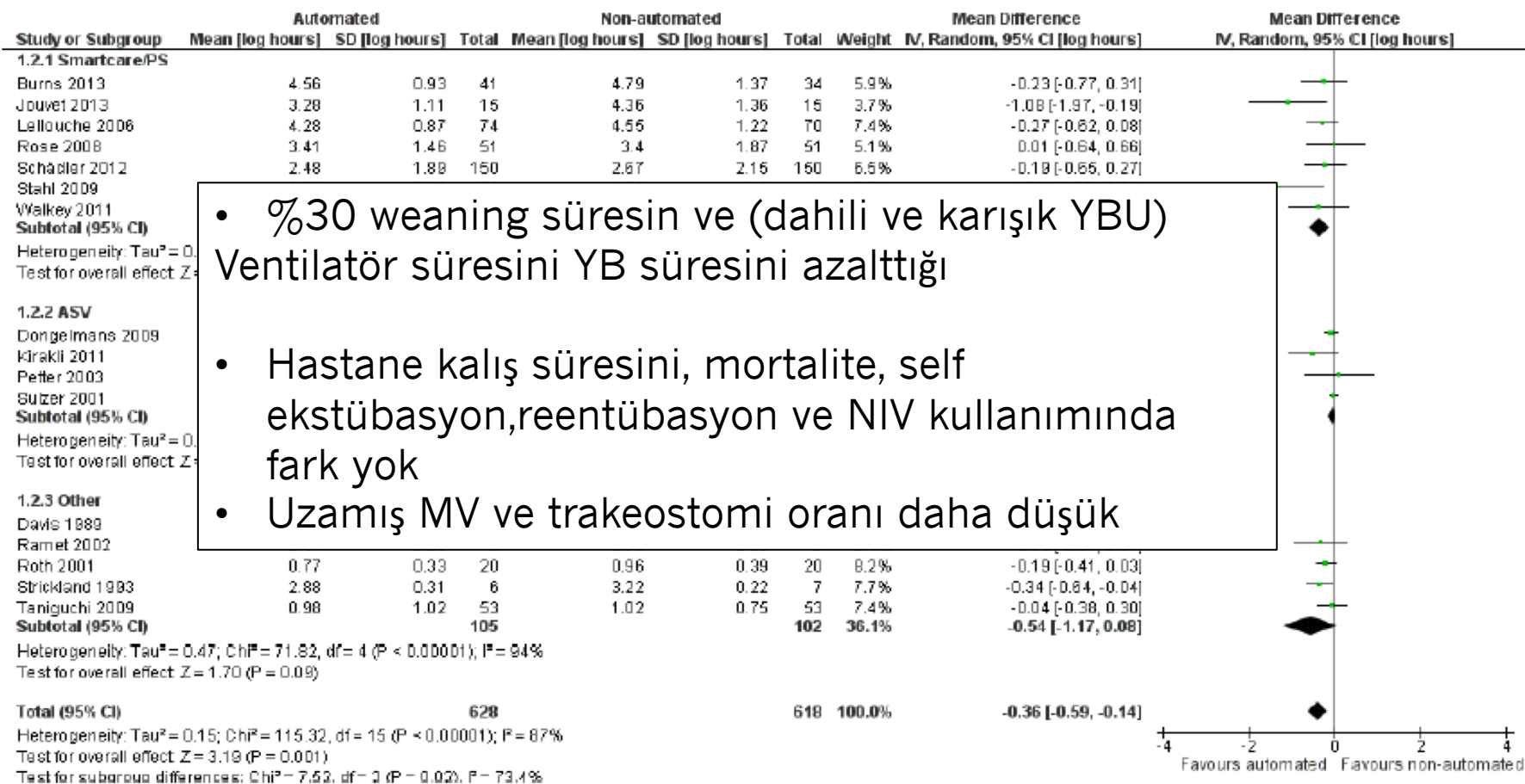
Automated versus non-automated weaning for reducing the duration of mechanical ventilation for critically ill adults and children (Review)

Cochrane Database of Systematic Reviews 2014.



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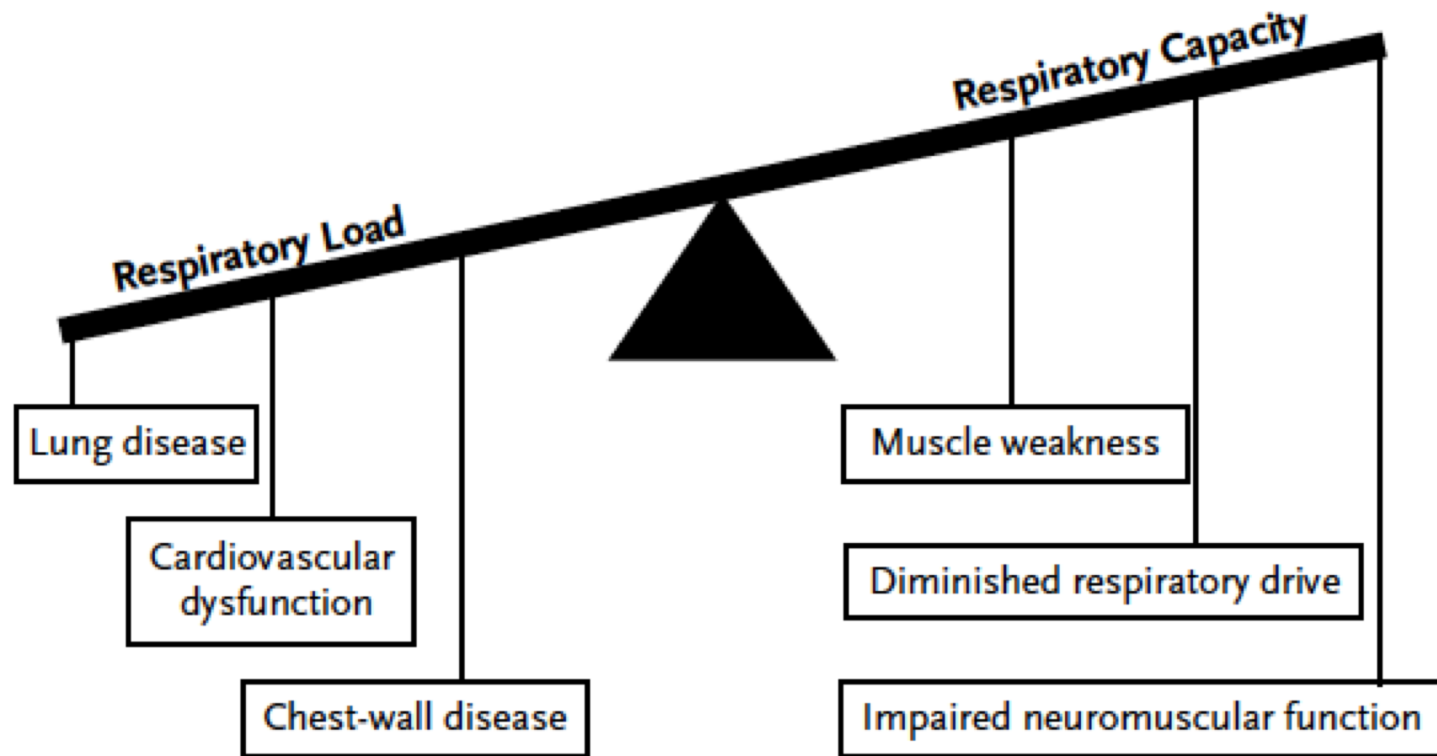
Figure 4. Forest plot of comparison: I Primary analysis: automated closed loop system versus non-automated system, outcome: I.2 Total weaning duration by automated system (log hours).



Başarısızlık

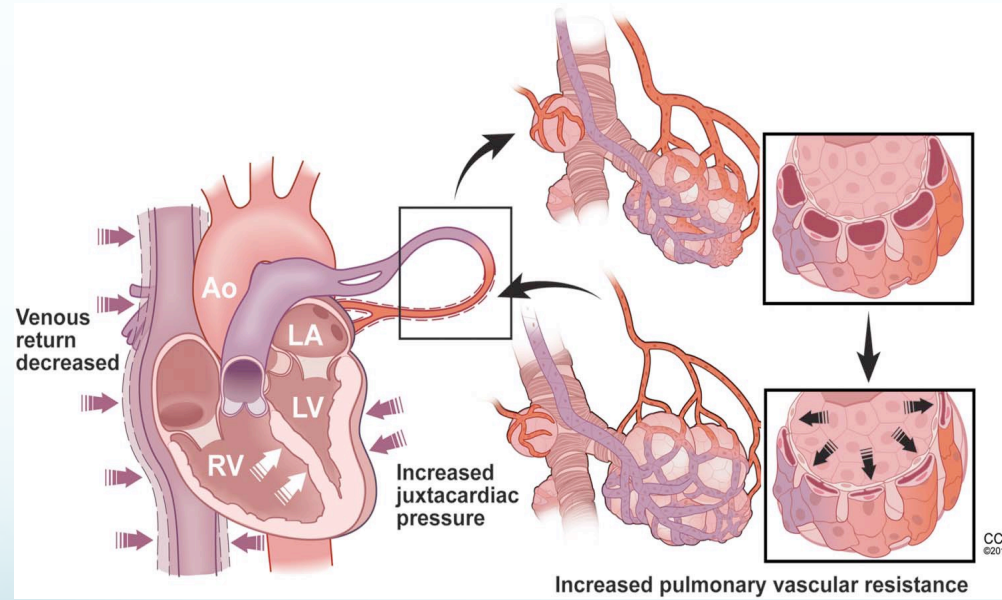
- %25-40 hasta SBT'i geçmesine rağmen weaning sonrası başarısızlık gelişmektedir.

Weaning başarısızlığı

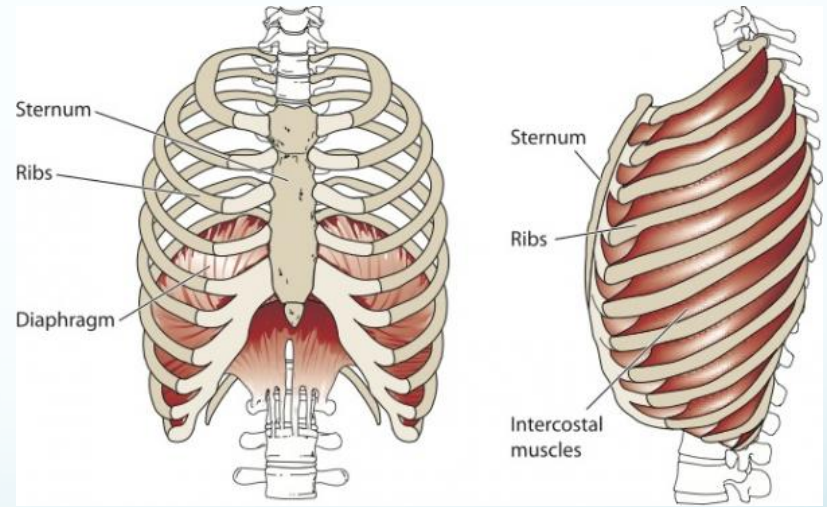


MV etkileri

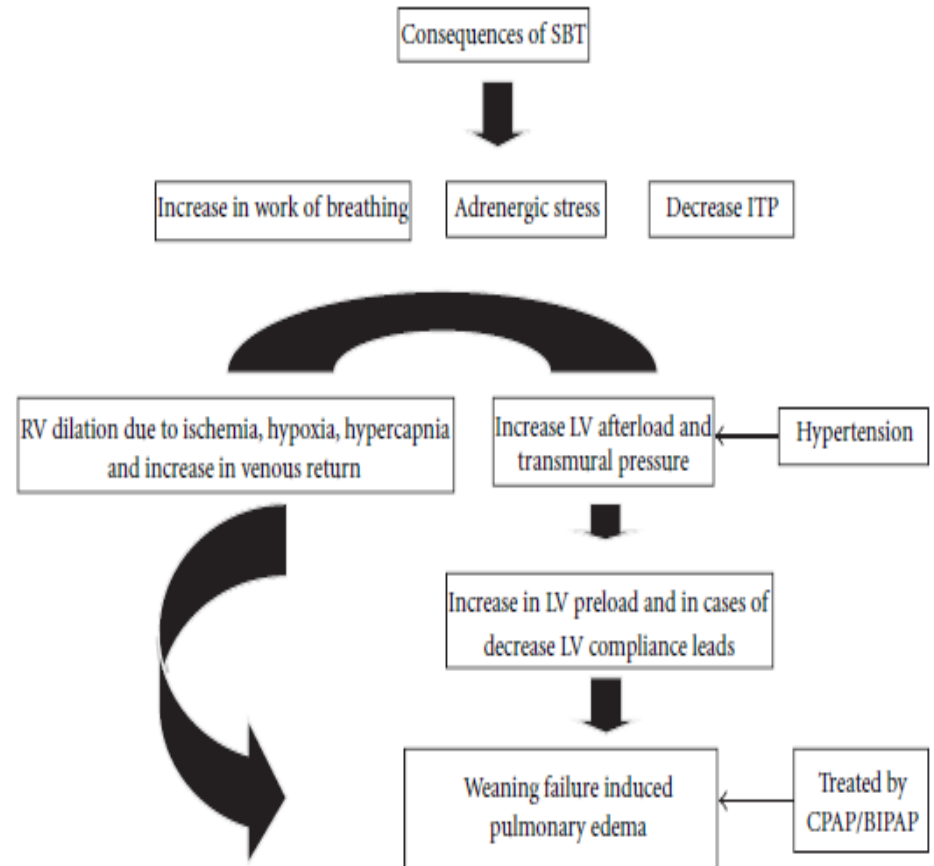
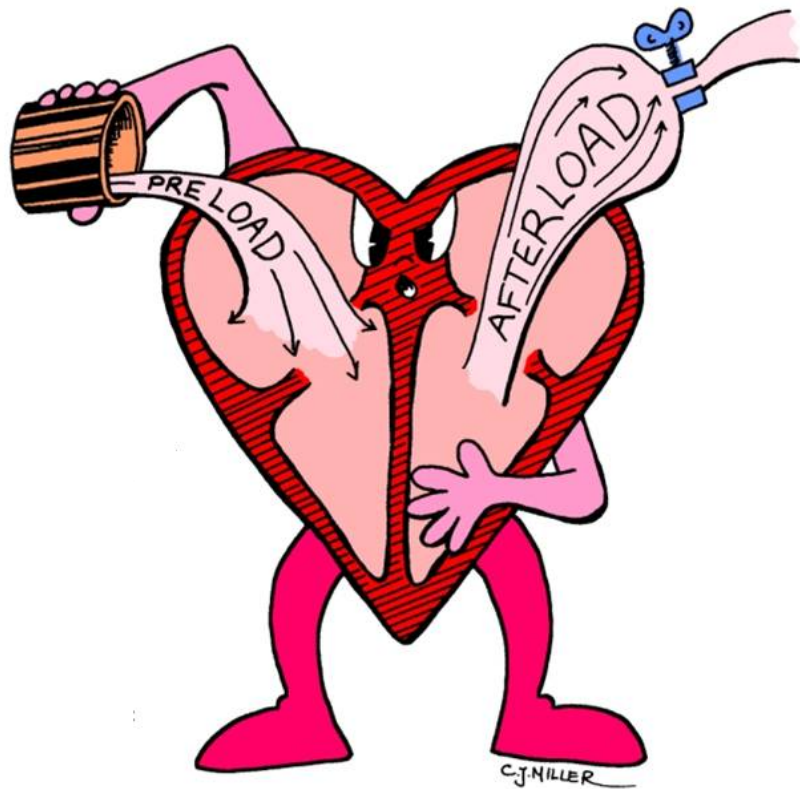
Kalp/dolařım



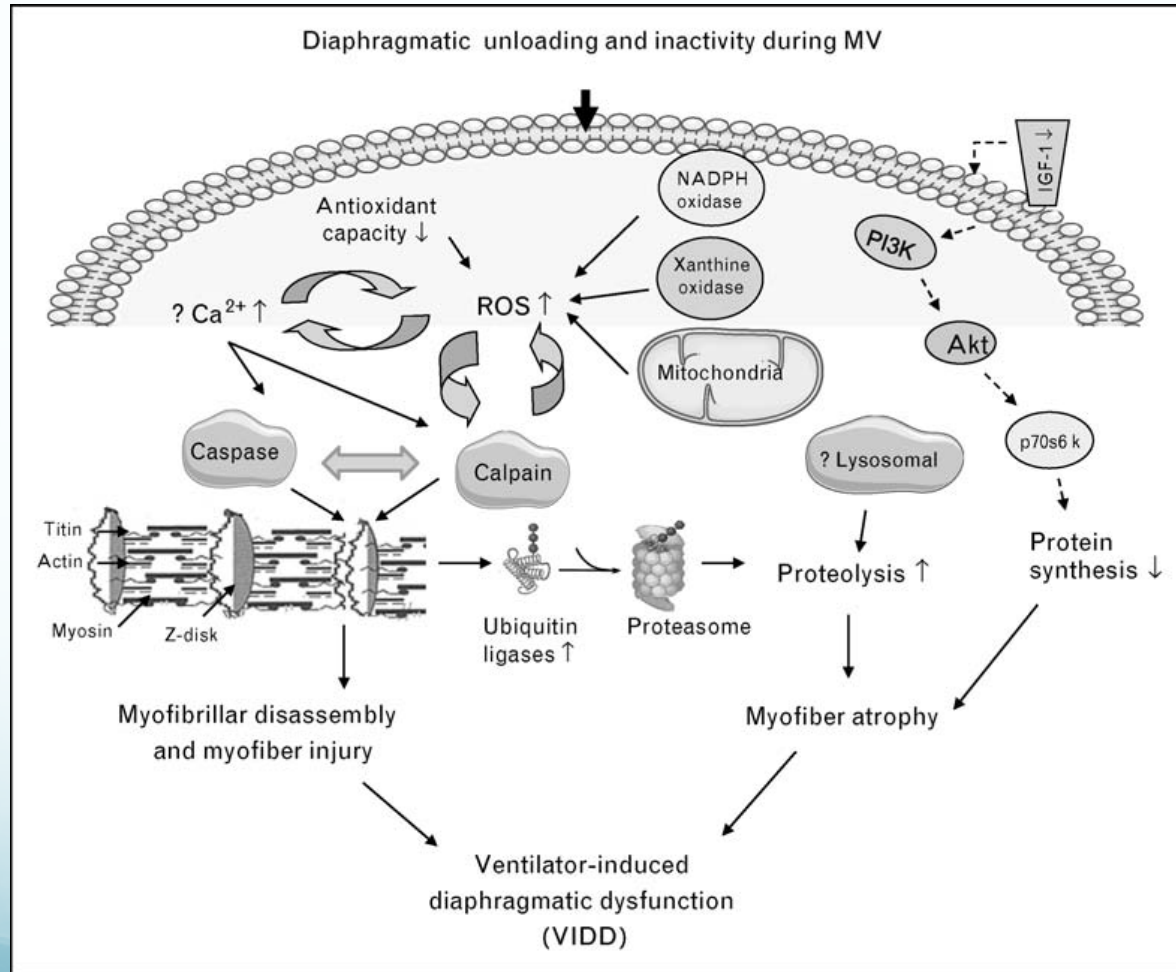
Solunum kasları



Weaning-Kalp



Ventilatöre Bağlı Diafragma Fonksiyon Kaybı

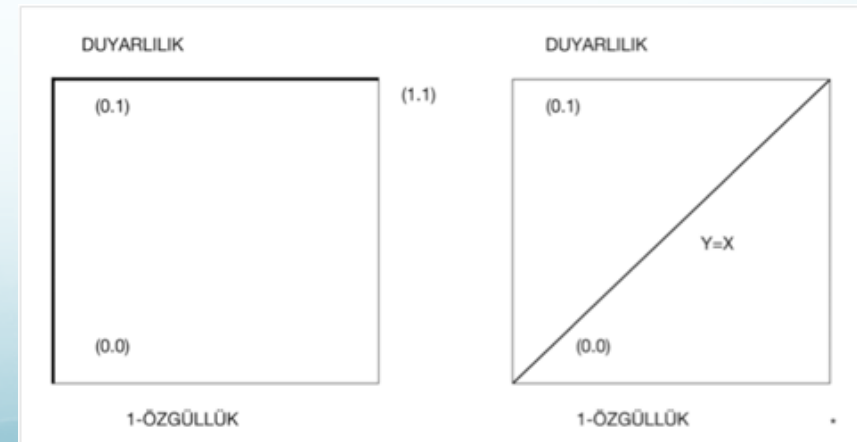
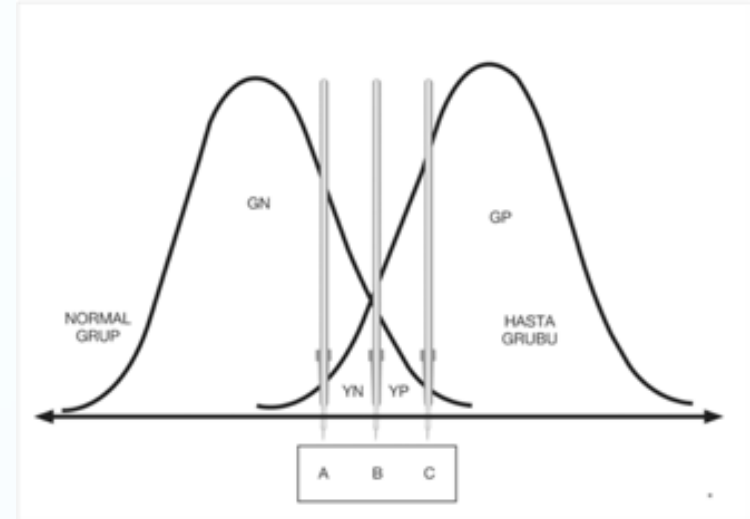


Risk faktörlerini gösteren
bir yöntem varmı



Belirteçler / Tanı oranı

- DUYARLILIK (*Sensitivity*): Testin, gerçek hastalar içinden hastaları ayırma yeteneğidir. $\text{DUYARLILIK} = A / (A + C) = \text{GP} / (\text{GP} + \text{YN})$
- ÖZGÜLLÜK (*Specificity*) testin, gerçek sağlamlar içinden sağlamları ayırma yeteneğidir. $\text{ÖZGÜLLÜK} = D / (D + B) = \text{GN} / (\text{GN} + \text{YP})$
- YANLIŞ NEGATİF ORANI: Gerçek hastalar içinden testin hatalı olarak sağlam dediği olgulardır. $\text{YN} = (1 - \text{DUYARLILIK}) = C / (A + C) = \text{YN} / (\text{YN} + \text{GP})$
- YANLIŞ POZİTİF ORANI: Gerçek sağlamlar içinden testin hatalı olarak hasta dediği olgulardır. $\text{YP} = (1 - \text{ÖZGÜLLÜK}) = B / (B + D) = \text{YP} / (\text{YP} + \text{GN})$



Parametreler

- 65 araştırmada 462 weaning parametresi kullanılmış
- Karışık yoğun bakımlarda 51 parametre
- KOAH hastalarında 21 parametre
- Kalp-Damar cerrahi YB da 45 parametre kullanılmış

•Tüm hastalarda bu parametrelerin aynı etkiye sahip olmadığı

• Her hasta ayrı ayrı değerlendirilmeli

Weaning Parametreleri

Indices	Author, year of publication	LR	AUC
$RR/V_T < 105 \text{ breaths} \cdot \text{min}^{-1} \cdot \text{L}^{-1}$	Yang & Tobin, 1991 ⁽²⁵⁾	NR	0.89
$RR/V_T < 60 \text{ breaths} \cdot \text{min}^{-1} \cdot \text{L}^{-1}$	Capdevilla et al., 1995 ⁽¹⁸⁾	NR	0.72
$RR/V_T < 100 \text{ breaths} \cdot \text{min}^{-1} \cdot \text{L}^{-1}$	Sassoon & Mahutte, 1993 ⁽¹⁷⁾	NR	0.78
$RR/V_T < 100 \text{ breaths} \cdot \text{min}^{-1} \cdot \text{L}^{-1}$	Conti et al., 2004 ⁽¹²⁾	0.69	0.70
$RR/V_T < 105 \text{ breaths} \cdot \text{min}^{-1} \cdot \text{L}^{-1}$	Nemer et al., 2009 ⁽¹⁴⁾	2.99	0.85
$P_{a,i} < 5.5 \text{ cmH}_2\text{O}$	Sassoon & Mahutte, 1993 ⁽¹⁷⁾	NR	0.64
$P_{a,i} < 5.0 \text{ cmH}_2\text{O}$	Capdevilla et al., 1995 ⁽¹⁸⁾	NR	0.93
$P_{a,i} < 4.0 \text{ cmH}_2\text{O}$	Conti et al., 2004 ⁽¹²⁾	1.17	0.47
$P_{a,i} < 3.1 \text{ cmH}_2\text{O}$	Nemer et al., 2009 ⁽¹⁴⁾	2.52	0.73
$MIP < -15 \text{ cmH}_2\text{O}$	Yang & Tobin, 1991 ⁽²⁵⁾	NR	0.61
$MIP < -50 \text{ cmH}_2\text{O}$	Capdevilla et al., 1995 ⁽¹⁸⁾	NR	0.71
$MIP < -16 \text{ cmH}_2\text{O}$	Conti et al., 2004 ⁽¹²⁾	0.87	0.57
$MIP < -25 \text{ cmH}_2\text{O}$	Nemer et al., 2009 ⁽²²⁾	NR	0.52
$P_{a,i}/MIP < 0.09 \text{ cmH}_2\text{O}$	Capdevilla et al., 1995 ⁽¹⁸⁾	NR	0.99
$P_{a,i}/MIP < 0.15 \text{ cmH}_2\text{O}$	Conti et al., 2004 ⁽¹²⁾	1.87	0.71
$P_{a,i}/MIP < 0.14 \text{ cmH}_2\text{O}$	Nemer et al., 2009 ⁽²²⁾	NR	0.78
$P_{a,i} \times RR/V_T < 300 \text{ cmH}_2\text{O/breaths} \cdot \text{min}^{-1} \cdot \text{L}^{-1}$	Conti et al., 2004 ⁽¹²⁾	0.61	0.67
$P_{a,i} \times RR/V_T < 270 \text{ cmH}_2\text{O/breaths} \cdot \text{min}^{-1} \cdot \text{L}^{-1}$	Nemer et al., 2009 ⁽¹⁴⁾	2.81	0.81
$P_{a,i} \times RR/V_T < 450 \text{ cmH}_2\text{O/breaths} \cdot \text{min}^{-1} \cdot \text{L}^{-1}$	Sassoon & Mahutte, 1993 ⁽¹⁷⁾	NR	0.80
$Cst_{rs} > 33 \text{ mL/cmH}_2\text{O}$	Yang & Tobin, 1991 ⁽²⁵⁾	NR	0.68
$Cst_{rs} > 30 \text{ mL/cmH}_2\text{O}$	Nemer et al., 2009 ⁽¹⁴⁾	3.40	0.83
$RR < 38 \text{ breaths/min}$	Yang & Tobin, 1991 ⁽²⁵⁾	NR	0.76
$RR < 35 \text{ breaths/min}$	Conti et al., 2004 ⁽¹²⁾	1.17	0.52
$RR < 30 \text{ breaths/min}$	Nemer et al., 2009 ⁽¹⁴⁾	1.87	0.76
Minute volume < 12 L	Conti et al., 2004 ⁽¹²⁾	1.0	0.54
Minute volume < 15 L	Yang & Tobin, 1991 ⁽²⁵⁾	NR	0.76
PaO_2/FiO_2	Nemer et al., 2009 ⁽¹⁴⁾	1.79	0.65
$IWI > 25 \text{ mL} \cdot \text{cmH}_2\text{O}^{-1} \cdot \text{breaths}^{-1} \cdot \text{min}^{-1} \cdot \text{L}^{-1}$	Nemer et al., 2009 ⁽¹⁴⁾	16.05	0.96
$CROP > 13 \text{ mL} \cdot \text{breaths}^{-1} \cdot \text{min}^{-1}$	Yang & Tobin, 1991 ⁽²⁵⁾	NR	0.78
$VC > 11 \text{ mL/kg}$	Conti et al., 2004 ⁽¹²⁾	1.3	0.71
$V_T > 5 \text{ mL/kg}$	Conti et al., 2004 ⁽¹²⁾	1.54	0.67
$V_T > 315 \text{ mL}$	Nemer et al., 2009 ⁽¹⁴⁾	2.81	0.81

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A PROSPECTIVE STUDY OF INDEXES PREDICTING THE OUTCOME OF TRIALS OF WEANING FROM MECHANICAL VENTILATION

KARL L. YANG, M.D., AND MARTIN J. TOBIN, M.D.

Table 1. Threshold Values of Indexes Used to Predict Weaning Outcome.

INDEX	VALUE*
Minute ventilation (liters/min)	≤ 15
Respiratory frequency (breaths/min)	≤ 38
Tidal volume (ml)	≥ 325
Tidal volume (ml)/patient's weight (kg)	≥ 4
Maximal inspiratory pressure (cm H ₂ O)†	≤ -15
Dynamic compliance (ml/cm H ₂ O)	≥ 22
Static compliance (ml/cm H ₂ O)	≥ 33
PaO ₂ /PAO ₂ ratio	≥ 0.35
Frequency/tidal volume ratio (breaths/min/liter)	≤ 105
CROP index (ml/breath/min)	≥ 13

*Threshold values were those that discriminated best in the training data set between the patients who were successfully weaned and those in whom a weaning trial failed; $\geq$ and $\leq$ indicate whether the values above the threshold value or those below it are those that predicted a successful weaning outcome.

†To convert value to kilopascals, multiply by 0.09807.

Table 2. Accuracy of the Indexes Used to Predict Weaning Outcome.*

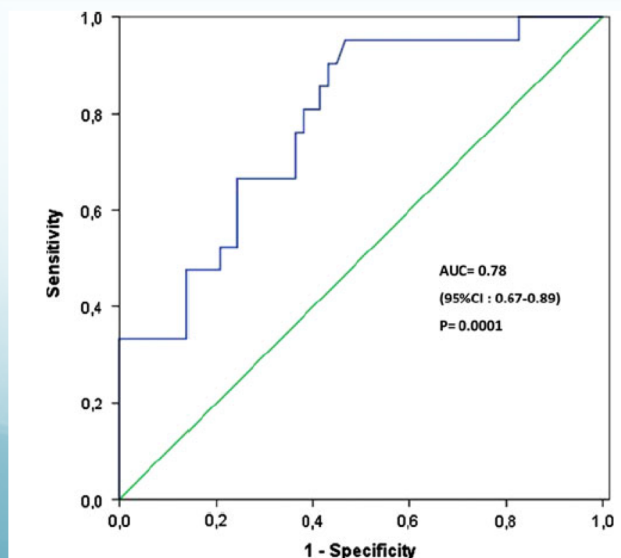
INDEX	SENSITIVITY	SPECIFICITY	POSITIVE PREDICTIVE VALUE	NEGATIVE PREDICTIVE VALUE
Minute ventilation	0.78	0.18	0.55	0.38
Respiratory frequency	0.92	0.36	0.65	0.77
Tidal volume	0.97	0.54	0.73	0.94
Tidal volume/patient's weight	0.94	0.39	0.67	0.85
Maximal inspiratory pressure	1.00	0.11	0.59	1.00
Dynamic compliance	0.72	0.50	0.65	0.58
Static compliance	0.75	0.36	0.60	0.53
PaO ₂ /PAO ₂ ratio	0.81	0.29	0.59	0.53
Frequency/tidal volume ratio	0.97	0.64	0.78	0.95
CROP index	0.81	0.57	0.71	0.70

*Values shown were derived from the complete prospective-validation data set, comprising 36 successfully weaned patients and 28 patients in whom weaning failed.

Lamia Ouanes-Besbes
Fahmi Dachraoui
Islem Ouanes
Rania Bouneb
Faten Jalloul
Mohamed Dlala
Mohamed Fadhel Najjar
Fekri Abroug

NT-proBNP levels at spontaneous breathing trial help in the prediction of post-extubation respiratory distress

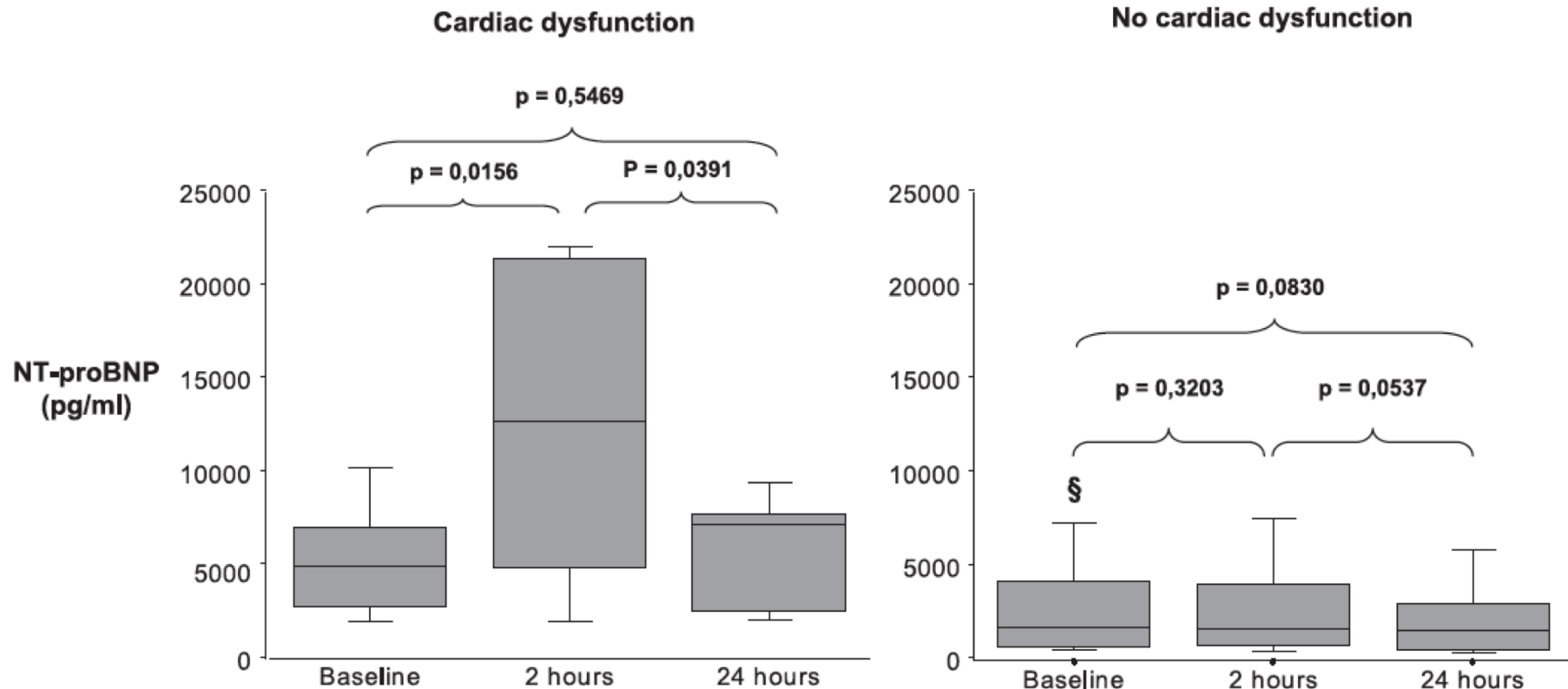
	Post-extubation respiratory distress (+) (<i>n</i> = 21)	Post-extubation respiratory distress (–) (<i>n</i> = 57)	<i>p</i>
Age, years med (IQR)	68 (61–75)	60 (48–72)	0.05
Male sex	15 (71 %)	36 (63 %)	NS
SAPS II med (IQR)	33 (20–46)	32 (24–40)	NS
MV duration med (IQR)	4 (2–6)	4 (2–5.5)	NS
Fluid balance day 1 (ml) med (IQR)	200 (35–340)	200 (150–350)	NS
Plasma protein concentration (g/l) med (IQR)	54 (49–59)	60 (55–65)	0.02
Hematocrit (%)	34 (28–40)	32 (26–38)	NS
NT-proBNP (pg/ml) med (IQR)	1,860 (1,800–1,920)	975 (910–1,040)	0.0001



NT-proBNP
≤ 1000 pg /ml
≥ 2000 pg /ml

Use of N-terminal pro-brain natriuretic peptide to detect acute cardiac dysfunction during weaning failure in difficult-to-wean patients with chronic obstructive pulmonary disease*

Salvatore Grasso, MD; Antonio Leone, MD; Michele De Michele, MD; Roberto Anaclerio, MD; Aldo Cafarelli, MD; Giovanni Ancona, MD; Tania Stripoli, MD; Francesco Bruno, MD; Paolo Pugliese, MD; Michele Dambrosio, MD; Lidia Dalfino, MD; Francesca Di Serio, MD; Tommaso Fiore, MD



Δ NT-proBNP (pg/ml 184.7 = sen %87.5, spe %90.9, PPV %87.5, NPV %83.3

Usage of B-type natriuretic peptide for prediction of weaning outcome by spontaneous breathing trial

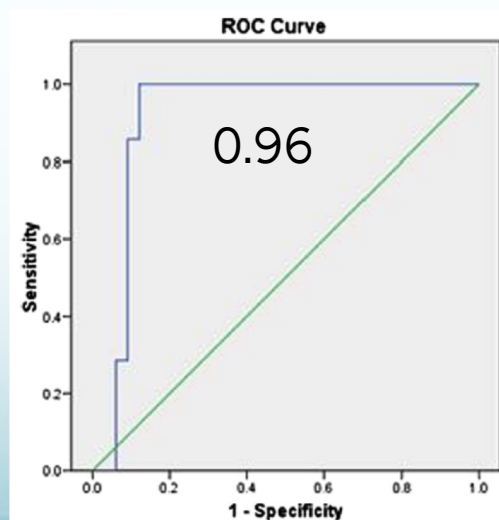
Sameh El Maraghi ^a, Mohamed Hosny ^{b,*}, Marwa Samir ^b, Waheed Radwan ^b

Table 4 BNP level before and after SBT in different study groups.

BNP level (pg/ml)	Study groups			<i>p</i> -Value
	SBT failure	Extubation failure	Extubation success	
Before SBT	853.1 ± 471.3	592.5 ± 271.7	543 ± 131.1	0.173
After SBT	1166.38 ± 189.7	795.29 ± 256.37	407.32 ± 202.41	0.004

Table 5 The mean percent change in plasma BNP level during 2-h. SBT.

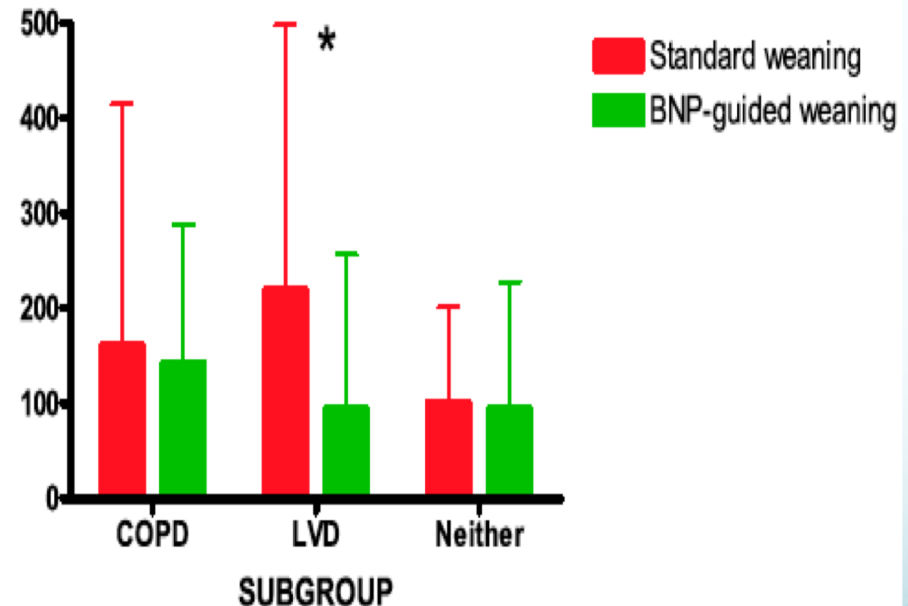
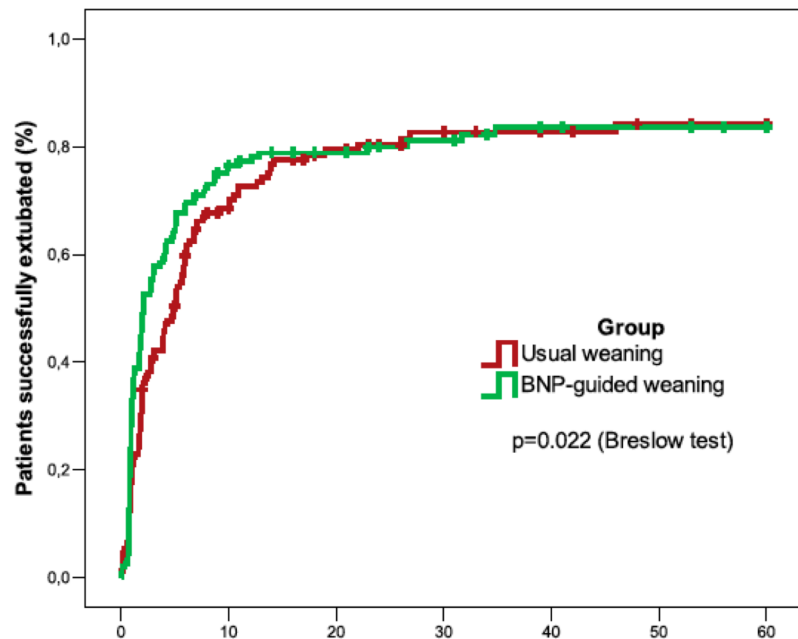
	Study groups			<i>p</i> -Value
	SBT failure	Extubation failure	Extubation success	
Percent change [increase/decrease]	36.723% [Inc.]	34.226% [Inc.]	24.987% [dec.]	< 0.001



Natriuretic Peptide–driven Fluid Management during Ventilator Weaning

A Randomized Controlled Trial

Armand Mekontso Dessap^{1,2,3}, Ferran Roche-Campo^{1,4}, Achille Kouatchet⁵, Vinko Tomicic⁶, Gaetan Beduneau⁷, Romain Sonnevile⁸, Belen Cabello⁴, Samir Jaber⁹, Elie Azoulay¹⁰, Diego Castanares-Zapatero¹¹, Jerome Devaquet¹², François Lellouche¹³, Sandrine Katsahian¹⁴, and Laurent Brochard^{1,2,3,15}



Am J Respir Crit Care Med 185;2012:A3092

Blood markers of oxidative stress predict weaning failure from mechanical ventilation

Cléber Verona ^a, Fernanda S. Hackenhaar ^a, Cassiano Teixeira ^{b, c}, Tássia M. Medeiros ^a, Paulo V. Alabarse ^a, Tiago B. Salomon ^a, Ártur K. Shüller ^a, Juçara G. Maccari ^b, Robledo Leal Condessa ^d, Roselaine P. Oliveira ^{b, c}, Silvia R. Rios Vieira ^d, Mara S. Benfato ^{a, *}

Table 2 Blood biomarkers

Damage
Plasma Carbonyl, nmol carbonyl/g prot
Serum MDA, $\mu\text{mol/l}^*$
Enzymatic defences
Erythrocytes CAT, U/g Hb
Erythrocytes SOD, U/g Hb
Erythrocytes GPx, U/g Hb
Non- enzymatic defences
Erythrocytes GSH, $\mu\text{mol/g Hb}$
Erythrocytes GSSG, $\mu\text{mol/g Hb}$
Erythrocytes GSH t, $\mu\text{mol/g Hb}$
Erythrocytes GSH/GSSG
Serum Vitamin C, $\mu\text{mol/l}^{**}$
Plasma Nit, mmol $\text{NaNO}_2/\text{g prot}^{***}$
Erythrocytes Nit, mmol $\text{NaNO}_2/\text{g Hb}$

Table 3 Cut-offs to predict success in SBT

	Value	Sensibility (%)	Specificity (%)	PV+ (%)	PV- (%)
Nit/Nit	>2.0609	64.10	60.30	50.00	73.10
Vit. C	>1.3720	59.00	79.40	63.90	75.80
MDA	>0.3028	58.30	71.00	53.80	74.60

Utility of Uric Acid as a Risk Marker of Extubation Success in Chronic Obstructive Pulmonary Disease

by Yu-Feng Wan, Yu-Long Zheng, Yi Ping Du, De Huai, Yi Gen Peng, Hong Yan Niu, Chuan-Qin Xu, Yan Shi, Dong-Hui Zheng

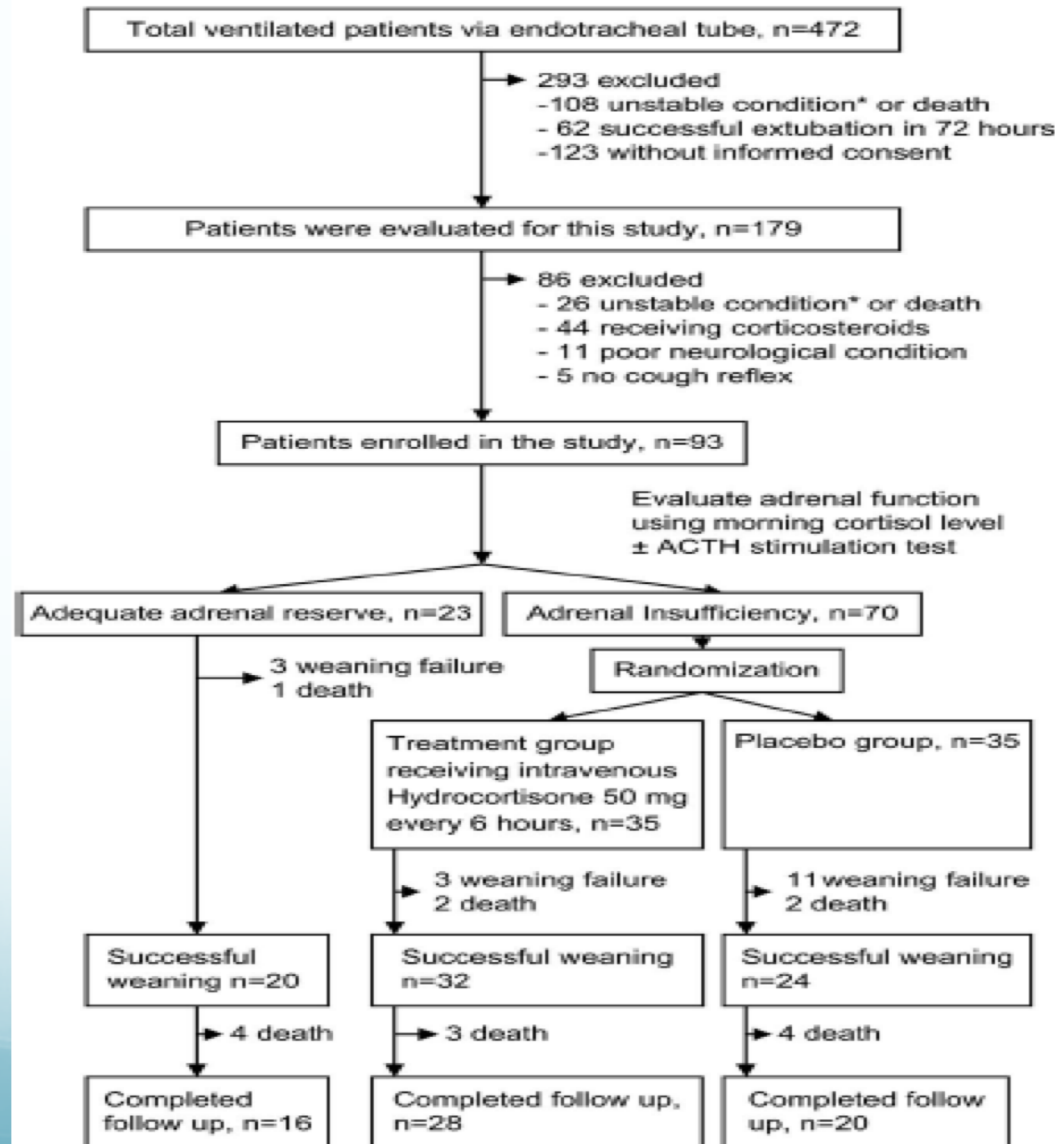
- *Results:* Uric acid on admission, duration of mechanical ventilation, pressure support ventilation, and APACHE II score on admission were significantly higher in COPD patients with extubation failure than in those with extubation success ($p < 0.05$), but lower tidal volume before weaning was observed in COPD patients with extubation failure. Among these patients, multiple logistic analyses indicated the independent risk factors for extubation success in the COPD subjects included serum uric acid level, APACHE II score on admission, and duration of mechanical ventilation. The diagnosis analysis showed that higher uric acid level and APACHE II score on admission and longer duration of mechanical ventilation had a significant ability to reflect extubation success in the COPD patients with respiratory failure.
- *Conclusions:* The novel finding of this study is that the extubation failure in COPD patients with respiratory failure is strongly related to serum uric acid level, APACHE II score on admission, and duration of mechanical ventilation. These results might be helpful for selecting the best time to remove the tracheal intubation and improving extubation success rate in COPD patients with respiratory failure.

Association between Adrenal Insufficiency and Ventilator Weaning

Am J Respir Crit Care Med Vol 173. pp 276-280, 2006

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Systemic Inflammatory Response During Weaning From Mechanical Ventilation In COPD And Non-COPD Patients

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RATIONALE A previous study from our group (Eur Respir J. 2012 Mar; 39(3):654-60) demonstrated that systemic interleukin-6 (IL-6) increased during a 20-min failed spontaneous breathing trial (SBT) in COPD patients, probably associated with the increased cardiopulmonary stress. These negative results could be explained by an inadequate sample size. **OBJECTIVES** To evaluate changes in different inflammatory parameters during SBTs of different duration. **METHODS** We included ventilated patients who met criteria for weaning, assessed before, at the end of the SBT, at 2 hours and 4 hours. We measured interleukin-1 (IL-1), interleukin-6 (IL-6), interleukin-8 (IL-8), tumor necrosis factor- α (TNF- α), and C-reactive protein (CRP). **RESULTS** Patients who failed the SBT (n=52; SBT failure=21, SBT success=31). COPD patients developed a higher inflammatory response during the SBT compared to success. In COPD patients, CRP levels increased during the SBT (median 1.5 mg/L) compared to the first SBT (median 0.5 mg/L) during the first SBT was significantly higher in COPD population who developed prolonged weaning (n=7) compared to non-prolonged weaning (p = 0.013). IL-8 levels during the SBT were associated with increased length of hospital and ICU stay and weaning duration. **CONCLUSION** Different inflammatory markers increased during a failed SBT in COPD patients. The correlation between CRP and physiological parameters suggests that the cardiopulmonary stress developed during the SBT may explain the increase in inflammatory markers in COPD patients. Larger studies are necessary to confirm the correlation of inflammatory markers levels with clinical outcomes.

KOAH dışı hastalarda anlamlılık yok
KOAH'da inflammatuar belirteçlerinin

SBT esnasında
(IL-6, IL-8, TNF-a, CRP) yüksekliği
weaning başarısızlık göstergesi

Prognostic Value Of Biomarkers In Weaning Mechanical Ventilation In Patients With Acute Respiratory Distress Syndrome

J. Alladina¹, K. A. Hibbert², R. S. Harris³, B. T. Thompson², J. L. Januzzi³, E. Bajwa^{3, 4}

¹Massachusetts General Hospital, Boston, ²Massachusetts General Hospital, Boston, MA, ³Massachusetts General Hospital and Harvard Medical School, Boston, MA, ⁴

ARDS'li
hastalarda

Soluble ST2
(sST2)

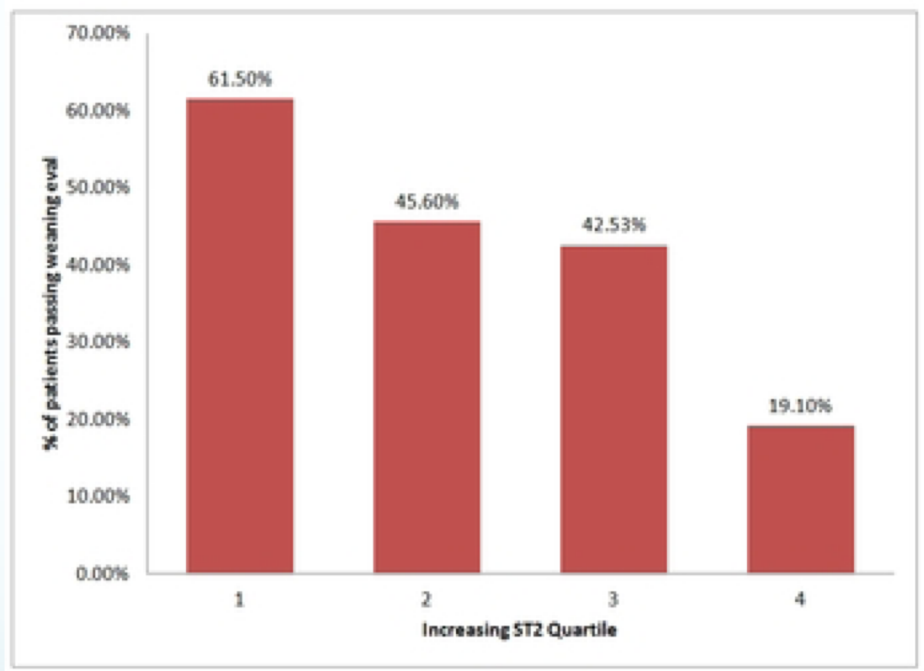


Figure: Higher day 3 ST2 = Lower chance of passing weaning assessment

Chromogranin A (CgA) as a marker of weaning in mechanically ventilated critically ill septic patients☆

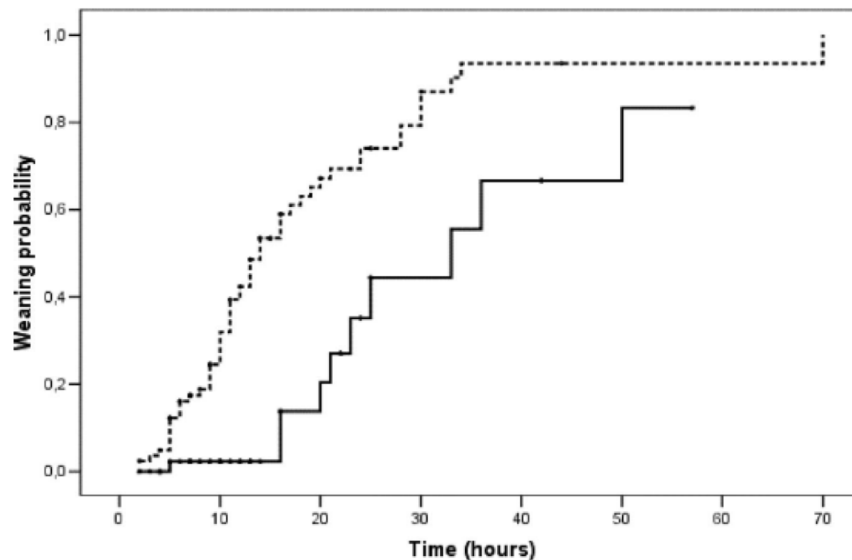
Tayseer Zaytoun ^a, Atef Abdelaziz Mahrous ^{a,*}, Alaa Dawood ^b,
Mohammed Elsammk ^c, Ashraf Abd El Halim ^d, Adel Attia ^d

Table 3 Multivariate analysis of predictors of success of weaning in critically ill septic patient groups.

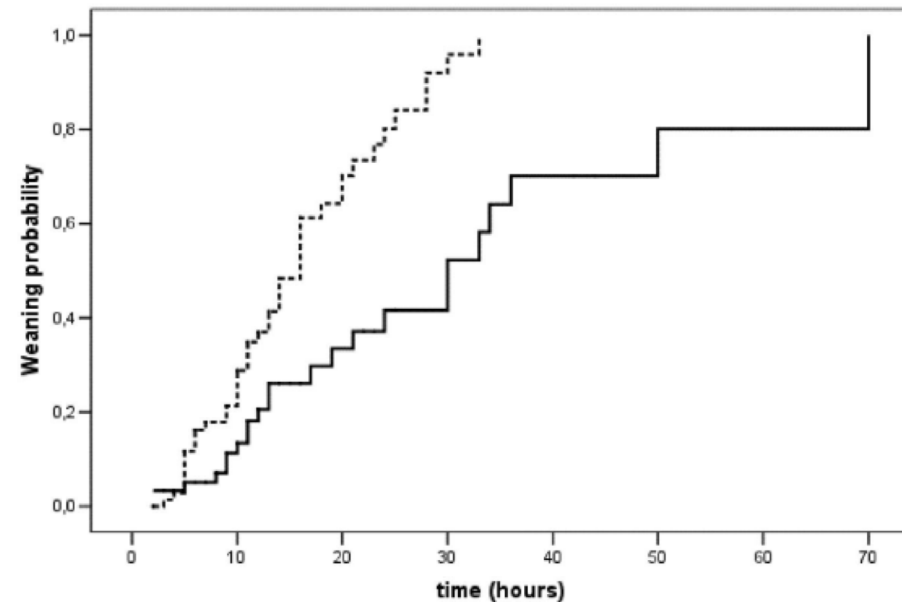
	<i>R</i>	<i>P</i>
Age	6.52	0.011*
Serum lactate	4.926	0.027*
Serum albumin	0.002	0.965
Serum urea	5.216	0.022*
Serum creatinine	8.528	0.004*
Platelet count 0 h	1.267	0.266
Platelet count 24 h	0.539	0.463
Platelet count 72 h	0.023	0.88
C-reactive protein 0 h	0.582	0.446
C-reactive protein 24 h	5.629	0.018*
C-reactive protein 72 h	7.386	0.007
Chromogranin A 0 h	17.69	0.000*
Chromogranin A 24 h	20.03	0.000*
Chromogranin A 72 h	19.61	0.000*
APACHE II	13.9	0.000*
SAPS	9.565	0.002*

Effect of acute kidney injury on weaning from mechanical ventilation in critically ill patients*

José M. Vieira Jr, MD, PhD; Isac Castro, PhD; Américo Curvello-Neto, MD, PhD; Sérgio Demarzo, MD, PhD; Pedro Caruso, MD, PhD; Laerte Pastore Jr, MD, PhD; Marina H. Imanishe, MD, PhD; Regina C. R. M. Abdulkader, MD, PhD; Daniel Deheinzelin, MD, PhD



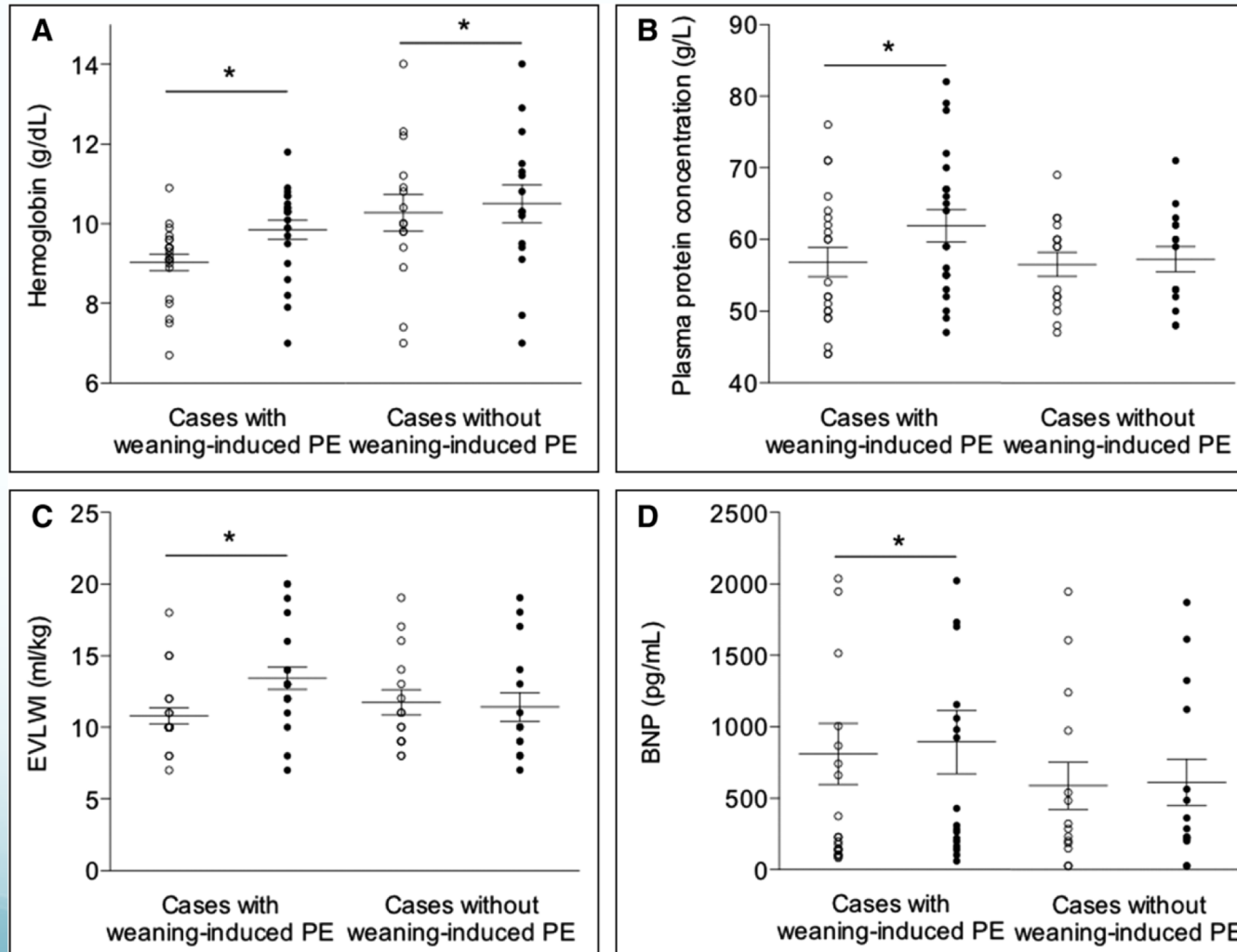
..... Control group
—— Oliguric patients



..... Control group
—— Increase in SCr > 85%

Extravascular Lung Water, B-Type Natriuretic Peptide, and Blood Volume Contraction Enable Diagnosis of Weaning-Induced Pulmonary Edema*

Martin Dres, MD^{1,2}; Jean-Louis Teboul, MD, PhD^{1,2}; Nadia Anguel, MD¹; Laurent Guerin, MD^{1,2}; Christian Richard, MD^{1,2}; Xavier Monnet, MD, PhD^{1,2}



Weaning and the Heart: From Art to Science*

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Luigi Pisani, MD

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Weaning

Sometimes ART (Experience)
Sometimes SCIENCE



Sonuç

- Hastanın MV ihtiyacını ve süresini azalt
 - Erken hedefe yönelik tedavisi (sepsis)
 - NIMV uygulaması
 - Düşük VT
 - Sedasyon
 - Sıvı tedavisi
 - ViP önleme yöntemleri
 - Erken fiziksel aktivite
- Protokol uygulaması
- Hızlı yüzeyel solunum indeksi (Tobin indeksi) (f/VT) halen en geçerli parametre
- Tecrübeli ekip
- Biyobelirteçler için çalışmalara ihtiyaç var

Teşekkürler



Kürşat Uzun, 2015, Konya