XI congresso nazionale

simeu

ROMA 24-26 MAGGIO 2018

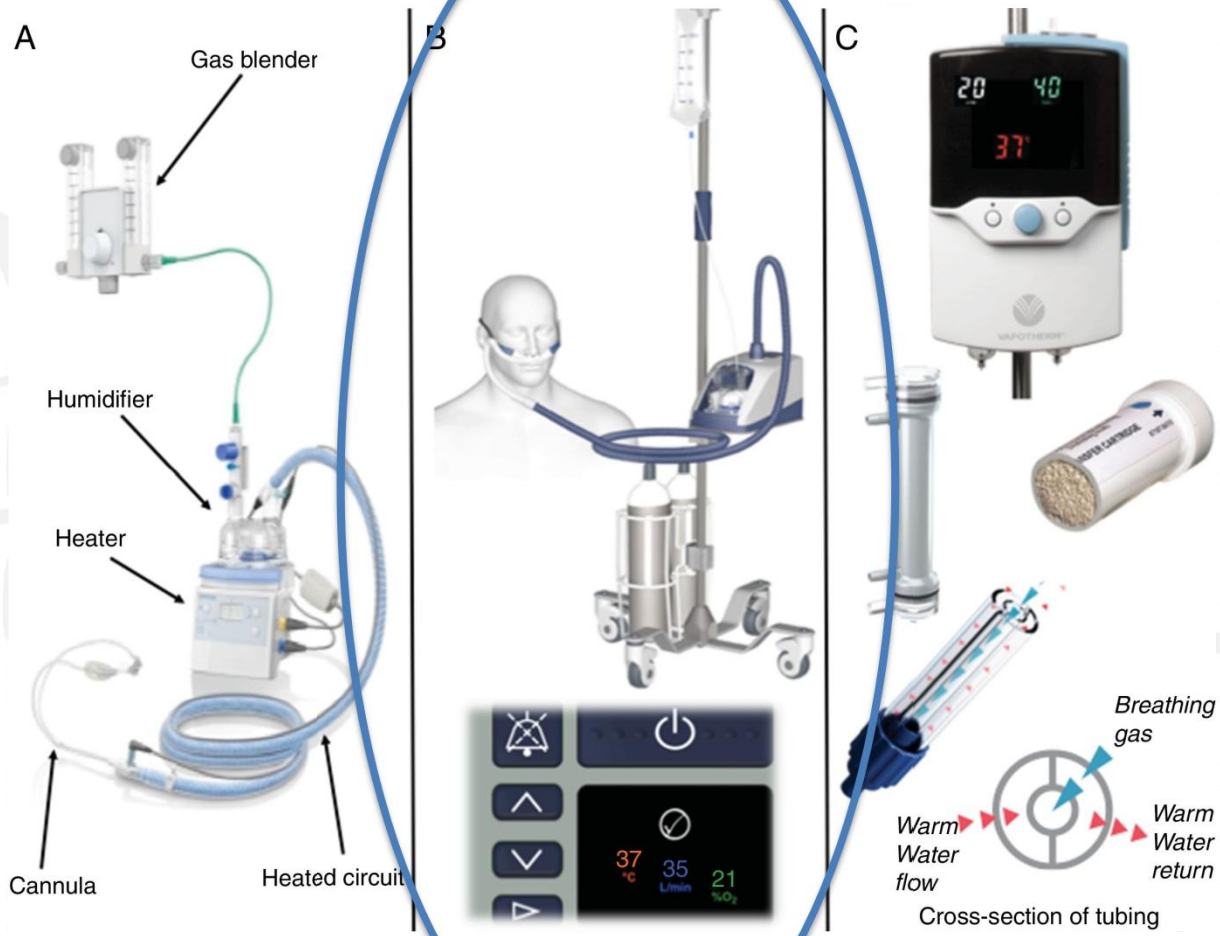
L'ossigenoterapia ad alti flussi

Dr.ssa Francesca Nori

Ospedale M.Bufalini, Cesena

Take it *EASY*

Take it *EASY*


A
Gas blender
Humidifier
Heater
Cannula
Heated circuit
B
37
35
21
C
Breathing gas
Warm Water flow
Warm Water return
Cross-section of tubing

Back to basics

Sistemi di ossigenazione

Ad alto flusso a prestazione fissa

Maschere venturi
ALTI FLUSSI CON CANNULA
Sistemi CPAP

- **FiO_2** relativamente fisse (20-100%)
- **Flussi** elevati (40-120 l/min.)

The old and the new

Alto comfort

Aumenta la clearance mucociliare

Washout dello spazio morto nasofaringeo

Riduce la resistenza inspiratoria Aumenta la resistenza espiratoria

Effetto PEEP

Intensive Care Med (2017) 43:1453–1463
DOI 10.1007/s00134-017-4890-1

The old and the new

SEVEN-DAY PROFILE PUBLICATION

Optimum support by high-flow nasal cannula in acute hypoxemic respiratory failure: effects of increasing flow rates

Tommaso Mauri[1,2]

Table 4 Effects of high-flow nasal cannula delivered at increasing flow rate on target physiologic variables

Variable	Facial mask (12 l/min)	HFNC (30 l/min)	HFNC (45 l/min)	HFNC (60 l/min)	*p* value
ΔPes (cmH_2O)	9.4 (6.8–12.2)	7.9 (5.9–11.8)[a]	8.1 (5.7–9.5)[a]	6.8 (5.1–9.3)[a]	<0.001*
PTP_{Pes} (cmH_2O s/min)	254.3 (160.2–359.5)	173.5 (126.4–256.4)[a]	168.9 (110.3–217.2)[a]	151.4 (111.8–195.6)[a]	<0.001*
$V_{T, glob}$ (ml/kg PBW)	7.2 ± 4.6	7.2 ± 5.0	7.1 ± 4.8	7.0 ± 4.7	0.154
$V_{T, glob}$ (ml)	443 ± 302	437 ± 314	435 ± 307	429 ± 301	0.840
$V_{T, non\text{-}dep}$ (ml)	257 ± 228	258 ± 244	259 ± 242	275 ± 232	0.896
$V_{T, dep}$ (ml)	186 ± 126	180 ± 117	176 ± 120	175 ± 112	0.428
$\Delta EELV_{glob}$ (ml)	Baseline	74 ± 174	115 ± 142	230 ± 237[a]	<0.01*
$\Delta EELV_{non\text{-}dep}$ (ml)	Baseline	53 ± 183	64 ± 133	128 ± 185	0.121
$\Delta EELV_{dep}$ (ml)	Baseline	31 ± 119	59 ± 121	93 ± 150[a]	<0.05*
MV (l/min)	9.1 ± 4.0	7.0 ± 2.8[a]	7.0 ± 2.9[a]	6.9 ± 2.1	≤0.001*
Corrected MV (l/min)	8.7 ± 4.2	6.5 ± 2.7[a]	6.6 ± 3.0[a]	6.6 ± 2.4	<0.01*
$V_{T, glob}/\Delta Pes$ (ml/cmH_2O)	42 (28–80)	52 (33–81)	57 (34–81)	55 (35–80)[a]	<0.01*
RR (bpm)	24 ± 8	20 ± 7	19 ± 7[a]	18 ± 7[a, b]	<0.001*
PaO_2 (mmHg)	70.0 (64.5–77.5)	81.0 (74.5–88.3)[a]	89.0 (80.5–101.0)[a]	97.4 (84.5–115.5)[a, b]	<0.001*
PaO_2/FiO_2 (mmHg)	151 ± 60	177 ± 74[a]	187 ± 67[a]	205 ± 61[a, b]	<0.001*
$PaCO_2$ (mmHg)	38.2 ± 5.0	38.0 ± 5.4	38.1 ± 5.7	38.3 ± 5.4	0.909
pH	7.46 ± 0.05	7.46 ± 0.06	7.46 ± 0.05	7.46 ± 0.06	0.997
SBP (mmHg)	133 ± 26	129 ± 24	130 ± 21	130 ± 23	0.208
MAP (mmHg)	77 (62–102)	77 (62–100)	81 (64–100)	76 (60–101)	0.258
HR (bpm)	86 ± 21	84 ± 22	85 ± 21	85 ± 22	0.705

User friendly

Helviz and Einav *Critical Care* (2018) 22:71
https://doi.org/10.1186/s13054-018-1990-4

Critical Care

REVIEW Open Access

A Systematic Review of the High-flow Nasal Cannula for Adult Patients

The HFNC is very versatile and user friendly. It can be used in a low-monitoring environment, with almost no knowledge of mechanical ventilation. However,

NON RITARDARE IOT

User friendly

P/F >250	Prevent progression	WARD
200<P/F<250	Avoid IOT	Sub-ICU/ICU
P/F<200	Alternative IOT	ICU

For whom the bell tolls

Helviz and Einav *Critical Care* (2018) 22:71
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Critical Care

REVIEW Open Access

A Systematic Review of the High-flow Nasal Cannula for Adult Patients

trauma

ARF

EPA

Post estubazione

Weaning

Post chirurgico

preIOT procedurale

Immunocompromesso

palliazione

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Titolo

High-flow nasal cannula (HFNC) therapy in non-selected patients with acute dyspnea: keep it or skip it?

Francesca Nori, MD

Age [years], mean ± SD	73,2	17,1
Male, n ± %	16	53
Chest trauma, n ± %	4	13
COPD exacerbation, n ± %	17	57
Pneumonia, n ± %	4	13
Cardiogenic pulmonary edema, n ± %	3	10
ARDS, n ± %	2	7
APACHE II score, mean ± SD	14,3	5,1
Estimated Mortality, mean ± SD	21,4	13,0
Ventilation [hours], mean ± SD	31,7	20,8
Length of stay [days], mean ± SD	4,7	2,0
Gas assessment:		
pH, mean ± SD	7,3	0,1
paO2 [mmHg], mean ± SD	66,9	20,6
paCO2 [mmHg], mean ± SD	53,0	14,9
paO2 / FiO2 [mmHg / %], mean ± SD	2,3	0,8
Lactate [mmol / L], mean ± SD	2,0	1,3
Respiratory Rate [breaths / min], mean ± SD	27,2	6,2
FiO2 [%], mean ± SD	31,2	9,1

We observed **30 non-selected patients** treated with HFNC (AIRVO 2, Fisher and Paykel) in our sub-ICU **between September 2017 and January 2018**.

HFNC was administered as first-line treatment or after non-invasive ventilation (NIV) and CPAP.

Clinical evaluation and gas assessment were performed at baseline and after one hour of treatment.

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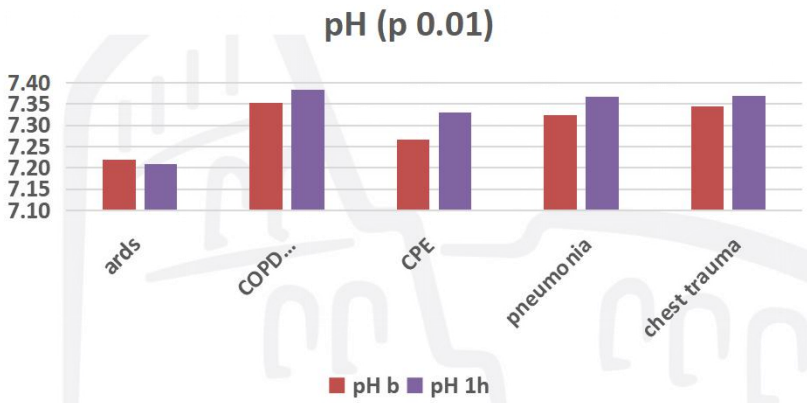

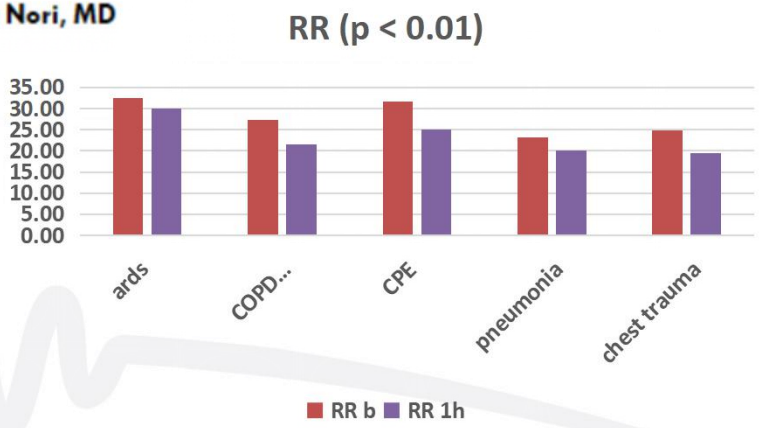

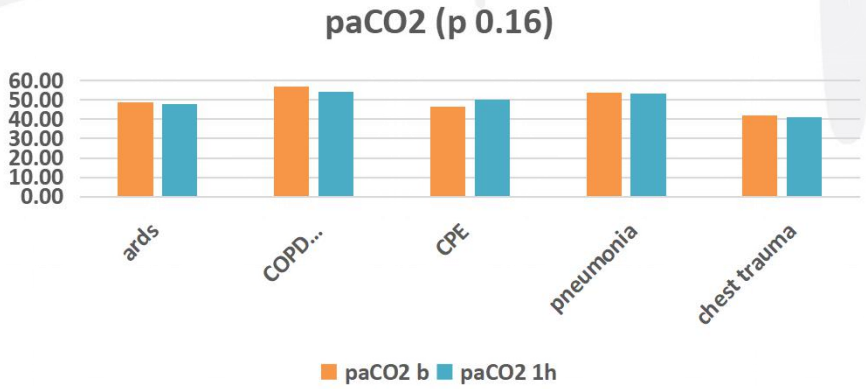

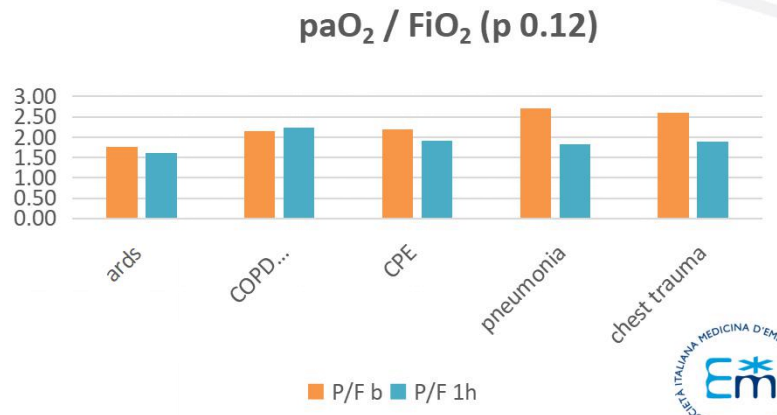

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Italian Journal of Emergency Medicine
SIMEU

High flow nasal cannula therapy in emergency room: may it change the path for COPD patients with exacerbation?

1/2018-Febbraio

EGA (con FiO2 45%):

pH 7.28
pO2 72.1 mmHg
pCO2 81.7 mmHg
P/F 160
Lac 1.84

In PS:
Inizia NIV con PSV 8 PEEP 7 FiO2 30% per intolleranza, ripete EGA

pH 7. 31
pO2 101.6 mmHg
pCO2 77.7 mmHg
P/F 336
Lac 1.55

In PS:
HFNC 50L/m FiO2 33%

pH 7. 33
pO2 68.7 mmHg
pCO2 61.7 mmHg
P/F 208
Lac 1.45

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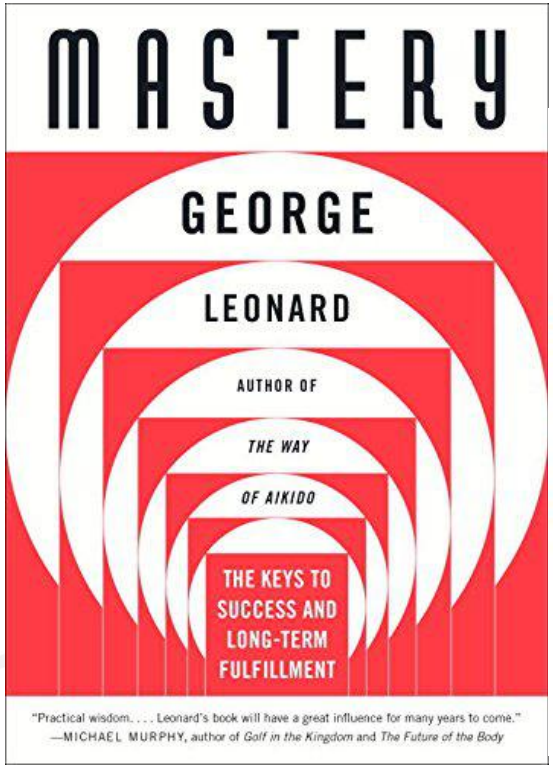
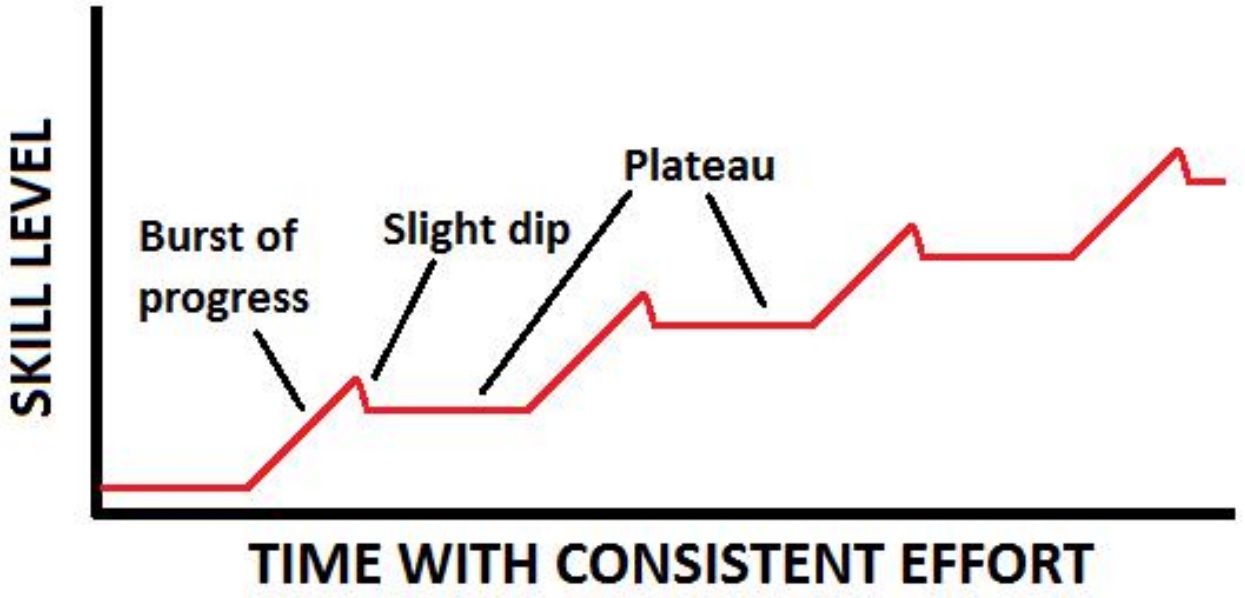
SEMPLICE

RIEMPIE UN GAP sia nell'ipossico che nell'ipercapnico

NON alternativa alla CPAP o NIV

The mastery curve





We have to love the plateu

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