

**CQ 9-6 人工呼吸管理となった成人敗血症患者に対して抜管後に予防的な非侵襲的人工呼吸(NIV)または経鼻高流量療法 (NHFT)を行うか？**

**検索データベース**

- MEDLINE (PubMed/Ovid)
- CENTRAL
- 医学中央雑誌
- Embase
- その他 ( )

**検索式とヒット数**

PubMed search strategy(検索日 2019 年 5 月 1 日)

#1	“Ventilator weaning”[MeSH] OR Weaning[tiab] OR “Airway Extubation”[MeSH] OR Extubat*[tiab] OR Postextubation[tiab] OR “Intubation, intratracheal”[MeSH:NoExp] OR “Ventilators, Mechanical”[MeSH:NoExp]	81167
#2	“Positive Pressure Respiration”[MeSH] OR “Noninvasive ventilation”[MeSH] OR “Noninvasive ventilation”[tiab] OR “Noninvasive ventilation”[tiab] OR “Noninvasive positive pressure ventilation”[tiab] OR “Non invasive positive pressure ventilation”[tiab] OR NIPPV[tiab] OR NPPV[tiab] OR NIV[tiab] OR “Bilevel Positive Airway Pressure”[tiab] OR “Biphasic Positive Airway Pressure”[tiab] OR BiPAP[tiab] OR (“High Flow”[tiab] AND Nasal[tiab]) OR (“High Flow”[tiab] AND Therapy[tiab]) OR (“High Flow”[tiab] AND Oxygen*[tiab]) OR “HFNC”[tiab] OR “HHFNC”[tiab] OR “HHHFNC”[tiab] OR “NHF*”[tiab]	31971
#3	(randomized controlled trial[pt] OR controlled clinical trial[pt] OR randomized[tiab] OR placebo[tiab] OR drug therapy[sh] OR randomly[tiab] OR trial[tiab] OR groups[tiab] NOT (animals [mh] NOT humans [mh]))	3889783
#4	#1 AND #2 AND #3	1336

CENTRAL search strategy(検索日 2019 年 5 月 1 日)

#1	("weaning"):ti,ab,kw OR MeSH descriptor: [Ventilator Weaning] OR	11799
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	MeSH descriptor: [Airway Extubation] OR (Extubat*):ti,ab,kw OR (Postextubation):ti,ab,kw OR MeSH descriptor: [Intubation, Intratracheal] this term only OR MeSH descriptor: [Ventilators, Mechanical] this term only	
#2	MeSH descriptor: [Positive-Pressure Respiration] OR MeSH descriptor: [Noninvasive Ventilation] OR (“Noninvasive ventilation”):ti,ab,kw OR (“Non invasive ventilation”):ti,ab,kw OR (“Noninvasive positive pressure ventilation”):ti,ab,kw OR (“Non invasive positive pressure ventilation”):ti,ab,kw OR (NIPPV):ti,ab,kw OR (NPPV):ti,ab,kw OR (NIV):ti,ab,kw OR (“Bilevel Positive Airway Pressure”):ti,ab,kw OR (“Biphasic Positive Airway Pressure”):ti,ab,kw OR (BiPAP):ti,ab,kw OR (“High Flow”):ti,ab,kw AND (Nasal):ti,ab,kw OR (“High Flow”):ti,ab,kw AND (Therapy):ti,ab,kw OR (“High Flow”):ti,ab,kw AND (Oxygen*):ti,ab,kw OR (HFNC):ti,ab,kw OR (HHFNC):ti,ab,kw OR (HHHFNC):ti,ab,kw OR (NHF*):ti,ab,kw	5416
#3	#1 AND #2	1120

医学中央雑誌 search strategy (検索日 2019年4月30日)

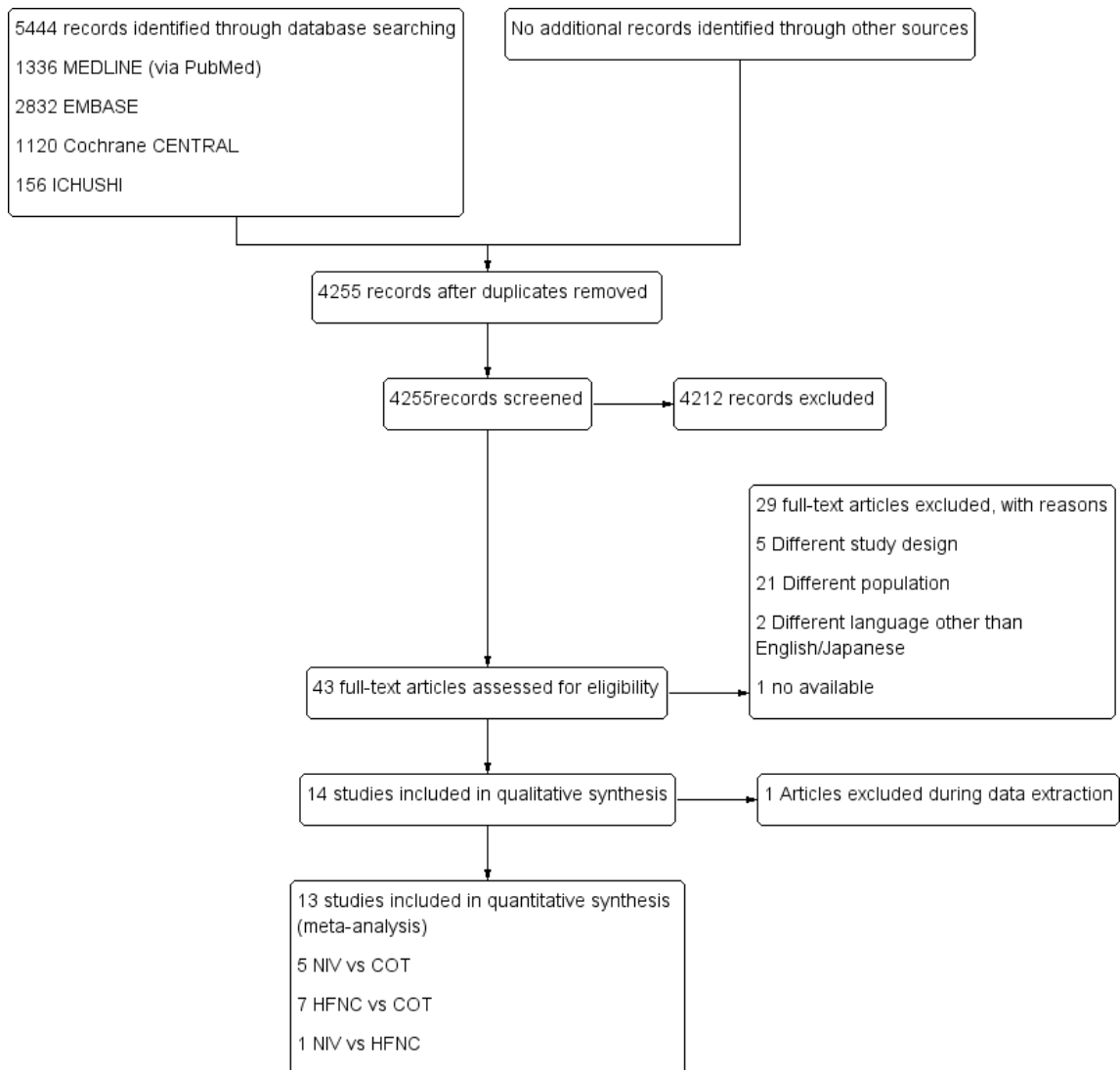
#1	((人工呼吸器取りはずし/TH or 人工呼吸器取りはずし/TA) and (PT=会議録除く)) or ((ウィーニング/TA) and (PT=会議録除く)) or ((@気管チューブ抜管/TH or 気管チューブ抜管/TA) and (PT=会議録除く)) or ((抜管/TA) and (PT=会議録除く)) or ((@人工呼吸器/TH or 人工呼吸器/TA) and (PT=会議録除く)) or ((@人工呼吸/TH or 人工呼吸/TA) and (PT=会議録除く))	29379
#2	((陽圧呼吸/TH or 陽圧呼吸/TA) and (PT=会議録除く)) or ((非侵襲的補助換気/TH or 非侵襲的補助換気/TA) and (PT=会議録除く)) or ((非侵襲的陽圧換気/TH or 非侵襲的陽圧換気/TA) and (PT=会議録除く)) or ((持続気道陽圧/TH or 持続気道陽圧/TA) and (PT=会議録除く)) or ((BiPAP/TA) and (PT=会議録除く)) or ((NIV/TA) and (PT=会議録除く)) or ((NPPV/TA) and (PT=会議録除く)) or ((NIPPV/TA) and (PT=会議録除く)) or ((@酸素吸入療法/TH or 酸素吸入療法/TA) and	21221

	(PT=会議録除く) or ((酸素療法/TA) and (PT=会議録除く)) or ((ハイフロー/TA) and (PT=会議録除く)) or ((ベンチュリマスク/TA) and (PT=会議録除く)) or ((ベンチュリーマスク/TA) and (PT=会議録除く)) or ((酸素マスク/TA) and (PT=会議録除く)) or ((リザーバーマスク/TA) and (PT=会議録除く)) or ((鼻カヌラ/TA) and (PT=会議録除く)) or ((ネーザルカヌラ/TA) and (PT=会議録除く)) or ((HFN/TA) and (PT=会議録除く)) or ((NHF/TA) and (PT=会議録除く)) or ((HFT/TA) and (PT=会議録除く)) or ((“High Flow”/TA) and (PT=会議録除く)) or ((酸素療法/TA) and (PT=会議録除く))	
#3	ランダム化比較試験/TH or 準ランダム化比較試験/TH or ランダム化/AL or 無作為化/AL or 比較試験/AL or 臨床試験/AL or プラセボ/AL or 対照/AL or コントロール/AL or 臨床研究/AL	301704
#4	#1 and #2 and #3	156

Embase search strategy(検索日 2019年5月1日)

#1	'ventilator weaning'/exp OR 'extubation'/exp OR extubat* OR postextubation OR 'mechanical ventilator'/exp OR 'endotracheal intubation'/exp OR 'mechanical ventilation'	127,837
#2	'noninvasive ventilation'/exp OR 'noninvasive ventilation' OR 'non invasive ventilation' OR 'noninvasive positive pressure ventilation' OR 'non invasive positive pressure ventilation' OR nippv OR nppv OR niv OR 'bilevel positive airway pressure' OR 'biphasic positive airway pressure' OR bipap OR hfnc OR hhfnc OR hhhfnc OR nhf* OR ('high flow' NAD therapy) OR ('high flow' AND oxygen*) OR ('high flow' AND nasal)	24,270
#3	'randomized controlled trial' OR 'controlled clinical trial' OR randomized OR placebo OR 'drug therapy' OR randomly OR trial OR groups	7,699,857
#4	#1 and #2 and #3	2,832

## PRISMA フロー図



## Risk of Bias サマリー

NIV vs COT  
re-intubation

	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias
Ferrer 2006	?	?	-	+	+	+	+
Orico 2013	+	+	-	+	+	+	+
Su 2012	+	+	-	+	+	+	+
Thanthitaweewat 2018	+	+	-	+	+	+	-

## Mortality

	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias
Ferrer 2006	?	?	-	+	+	+	+
Mohamed 2013	?	?	-	+	+	+	+
Orico 2013	+	+	-	+	+	+	+
Su 2012	+	+	-	+	+	+	+
Thanthitaweewat 2018	+	+	-	+	+	+	-

post extubation respiratory failure

	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias
Ferrer 2006	?	?	-	+	+	+	+
Su 2012	+	+	-	+	+	+	+

# HFNC vs COT

## Re-intubation

	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias
Arman 2017	?	?	-	+	+	+	?
Fernandez 2017	+	+	-	+	+	+	-
Hernández 2016(1)	+	+	-	+	+	+	+
Maggiore 2014	+	+	-	+	+	+	+
Song 2017	+	+	-	+	+	+	+

## Mortality

	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias
Arman 2017	?	?	-	+	+	+	?
Fernandez 2017	+	+	-	+	+	+	-
Hernández 2016(1)	+	+	-	+	+	+	+
Maggiore 2014	+	+	-	+	+	+	+

## post extubation respiratory failure

	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias
Fernandez 2017	+	+	-	+	+	+	-
Hernández 2016(1)	+	+	-	+	+	+	+



## Skin troubles

	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias
Hernández 2016(1)	+	+	-	+	-	?	+

## Devise discomfort/ dryness discomfort

	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias
Antonicelli 2011	?	?	-	?	-	?	?
Idone 2010	?	?	-	?	-	?	?
Maggiore 2014	+	+	-	+	-	?	+
Song 2017	+	+	-	?	-	?	+

## NIV vs HFNC

Re-intubation, Mortality, post extubation respiratory failure

Hernández 2016(2)	Random sequence generation (selection bias)	+
	Allocation concealment (selection bias)	+
	Blinding of participants and personnel (performance bias)	-
	Blinding of outcome assessment (detection bias)	+
	Incomplete outcome data (attrition bias)	+
	Selective reporting (reporting bias)	+
	Other bias	+

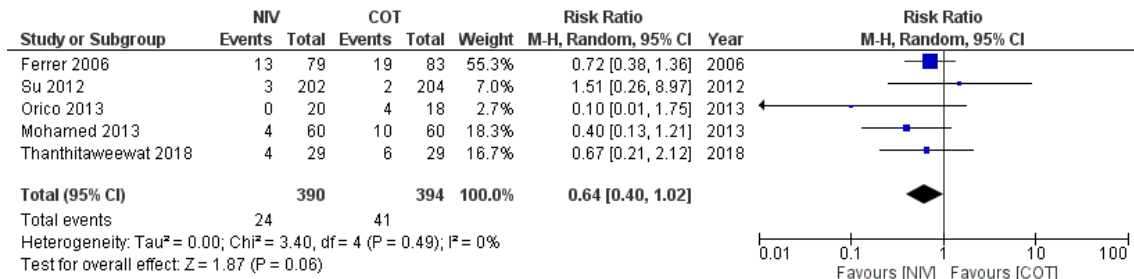
## Skin trouble

Hernández 2016(2)	Random sequence generation (selection bias)	+
	Allocation concealment (selection bias)	+
	Blinding of participants and personnel (performance bias)	-
	Blinding of outcome assessment (detection bias)	+
	Incomplete outcome data (attrition bias)	+
	Selective reporting (reporting bias)	?
	Other bias	+

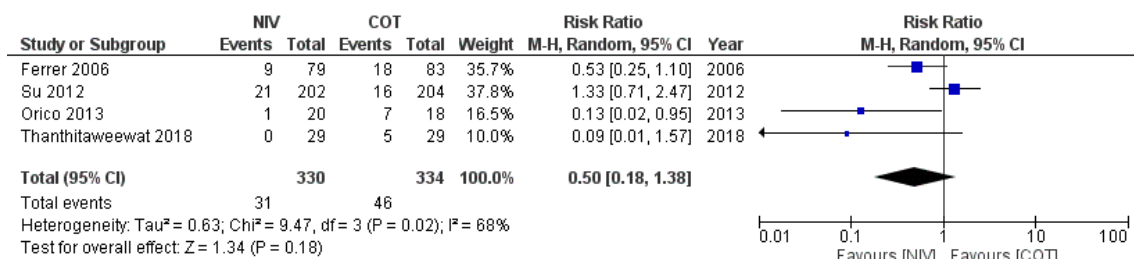
## フォレストプロット

### NIV vs COT

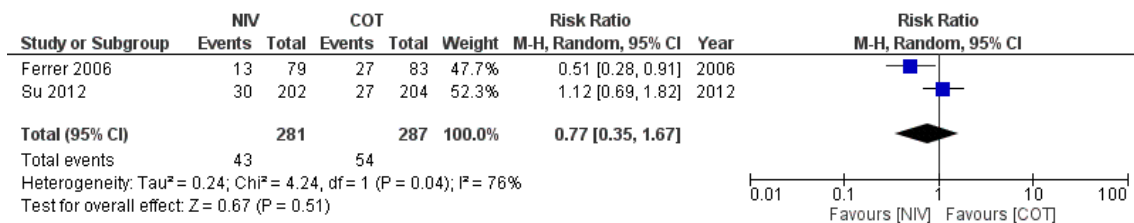
#### NIV vs COT: mortality



#### NIV vs COT: re-intubation

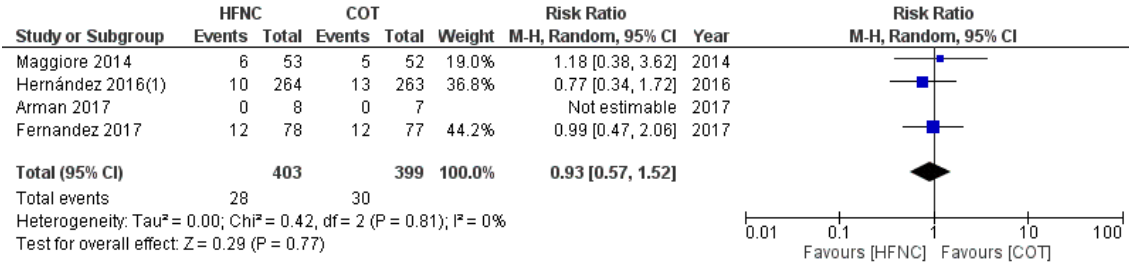


#### NIV vs COT: post extubation respiratory failure

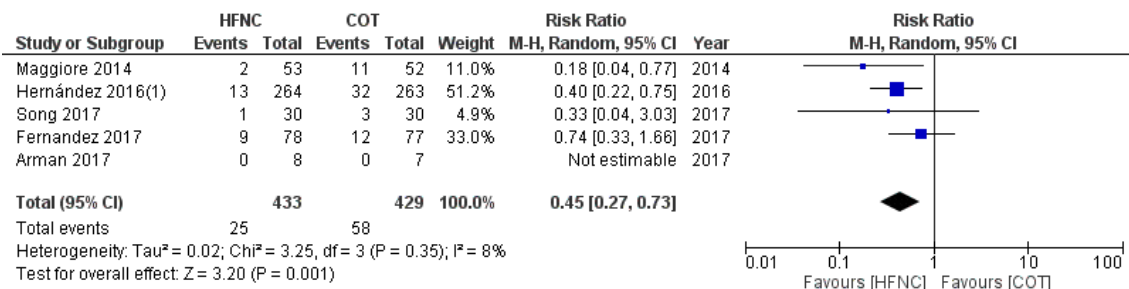


## HFNC vs COT

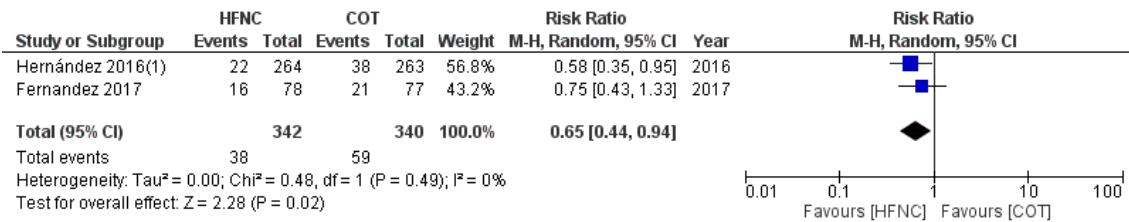
### HFNC vs COT: mortality



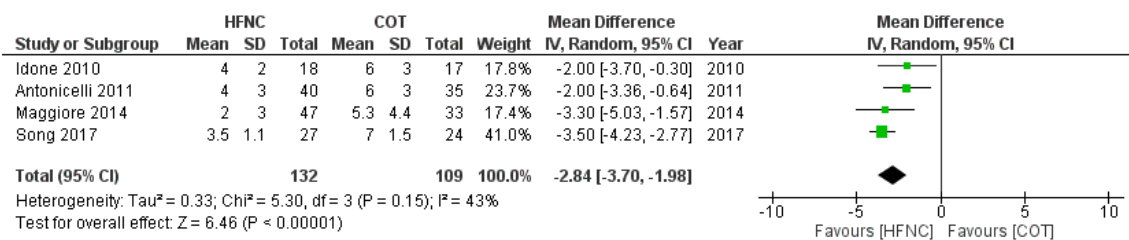
### HFNC vs COT: re-intubation



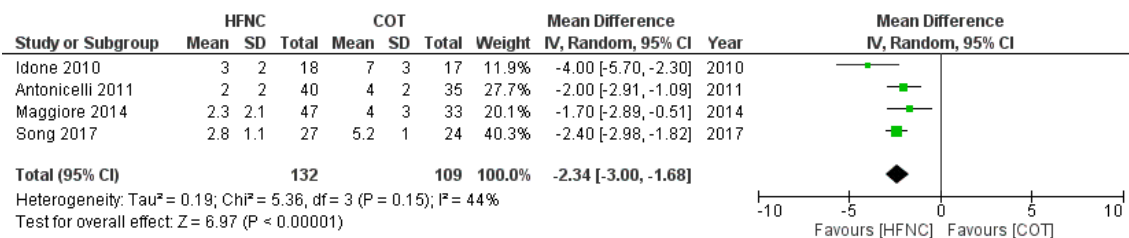
### HFNC vs COT: post extubation respiratory failure



### HFNC vs COT: device discomfort

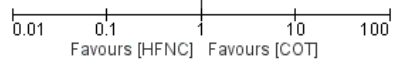


### HFNC vs COT: dryness discomfort



## HFNC vs COT: skin disruption

Study or Subgroup	HFNC		COT		Weight	Risk Ratio	Year	Risk Ratio
	Events	Total	Events	Total		M-H, Random, 95% CI		M-H, Random, 95% CI
Hernández 2016(1)	0	264	0	263		Not estimable	2016	
<b>Total (95% CI)</b>		<b>264</b>		<b>263</b>		<b>Not estimable</b>		
Total events	0		0					
Heterogeneity: Not applicable								
Test for overall effect: Not applicable								



## NIV vs HFNC

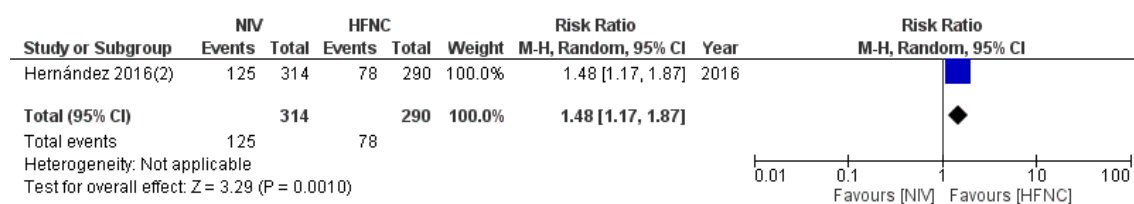
### NIV vs HFNC: mortality



### NIV vs HFNC: re-intubation



### NIV vs HFNC: post extubation respiratory failure



### NIV vs HFNC: skin disruption

