A Review on

Mask Rotation in Ventilator (VEN) Bed - Prevention of Mask Related Skin Lesion

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NIV Mask Related Skin Lesion

Background

- Incidence rate of 13 Pilot hospitals in HA :
- Designated VEN Beds: 5.6%
- Non- designated VEN beds: 8.0% (HA NIV Audit Report, 2015)

Objective

- To review the effectiveness of mask rotation on preventing mask related skin lesion

Protocol for Mask Rotation

Use Oronasal mask as a first interface

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Inspect facial skin condition in the first 2 hours after commence NIV (when ABG available)

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Rotate to Full Face mask as second interface (when patient develop **apparent skin redness OR** Use NIV continuos **longer than 12 hours per day**

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Rotate between first & second interface (together with oral hygiene & puff administration) **Q4H** at the **daytime**

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Allow regular breaks (3-5 mins) every 4 hours at the daytime if tolerated

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Inspect facial skin condition on every mask rotation

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Monitoring patient's parameters & avoid over-tightening of mask (keep leakage ~7-25 L/min) Q1H

Results

- 1/9/15 – 31/12/16
- N=66

Non-Mask Rotation Group (1/9/2015 – 31/7/2016)

- **10.7%** developed skin lesion

Mask Rotation Group (1/8/2016 – 31/12/16)

- 5 cases enrolled
- **0%** developed skin lesion
- **All cases recovered** from skin redness after the first mask rotation (**4 hrs**)

Results

	Time to skin lesion develop (hr)		Time of NIV use per day (hr)	
	Mean	SD	Mean	SD
No mask rotation	176.00	147.69	17.67	4.46
Mask rotation	∞	∞	19.38	1.29

Time to skin lesion develop & NIV use per day between non-mask rotation & mask rotation group

	Skin Lesion +	Skin Lesion 0	Total
Mask Rotation +	0	5	5
Mask Rotation 0	6	0	6
Total	6	5	11

Odds ratio	0.0070
95 % CI:	0.0001 to 0.4141
z statistic	2.383
Significance level	P = 0.0172

Effectiveness of mask rotation in skin lesion prevention (redness occurrence)