



وزارة الصحة
سياسات واجراءات

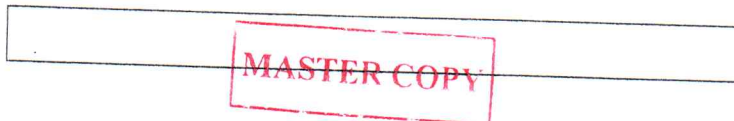
MOH	POL	HOS	RT	04	رمز السياسة:	High Frequency Oscillatory Ventilation: اسم السياسة
					الطبعة: الأولى	عدد الصفحات: 6 صفحات.

الوحدة التنظيمية: مديرية التطوير المؤسسي وضبط الجودة		
الجهة المعنية بتنفيذ السياسة: وحدة المعالجة التنفسية		
الاعداد:	التوقيع: <u>هنا</u>	تاريخ الاعداد: ٢٠٢٢ / ٨ / ٢٠
لجنة تطوير واستحداث وحدات المعالجة التنفسية في مستشفيات وزارة الصحة	التوقيع:	
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المراجعة: قسم إدارة الجودة / شعبة سلامة المرضى	التوقيع: <u>أحمد</u>	تاريخ المراجعة: ٢٠٢٢ / ٩ / ٢٢
التدقيق من ناحية ضبط الجودة: مدير مديرية التطوير المؤسسي وضبط الجودة	التوقيع: <u>هنا</u>	تاريخ تدقيق ضبط الجودة: ٢٠٢٢ / ١١ / ٢٢
الاعتماد: عطوفة الأمين العام للشؤون الإدارية والفنية	التوقيع: <u>أحمد</u>	تاريخ الاعتماد: ٢٠٢٣ / ١١ / ٢٧



تتم مراجعة السياسة كل سنتين على الأقل من تاريخ اعتماد آخر طبعة:		
رقم الطبعة	تاريخ الاعتماد	مبررات مراجعة السياسة

ختم النسخة الاصلية



أحمد
أحمد
أحمد
أحمد



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1. Purpose:

HFOV Viasys 3100A utilized to improve oxygenation, eliminate CO₂ and prevent lung injury in pediatric patients requiring high Mean airway pressure (Paw) (and at risk for Ventilator induced lung injury).

2. Policy:

High Frequency Oscillatory Ventilation (HFOV) should be used in pediatric patients with respiratory failure with Acute Respiratory Distress Syndrome (ARDS) requiring high Mean airway pressure (Paw) or pediatric patients failed on conventional ventilators.

3. Scope:

His approved policy and procedure is applicable to ICU Pediatrics Unit and Respiratory therapy unit.


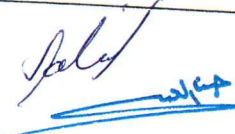
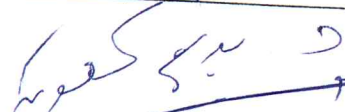

4. Responsibilities:

It is the responsibility of pediatric ICU physician and Respiratory Therapist to implement and follow the procedures while apply patient on High Frequency Oscillatory Ventilation.

5. Definition:

High Frequency Oscillatory Ventilation: Is the ventilator that delivers more than one hundred fifty breath/minute (2.5Hz) and delivers very small tidal volume, usually equal or less than dead space volume (0.5–5 mL/kg).

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Mean Airway Pressure (Paw): defines the mean pressure applied during positive-pressure mechanical ventilation and correlates with alveolar ventilation, arterial oxygenation and hemodynamic performance.

6. Procedure:

6.1 Calibrate equipment by:

- 6.1.1 Turn on source gas and set Bias flow to 20 lpm.
- 6.1.2 Set mean pressure adjust and mean pressure limit to maximum.
- 6.1.3 Push in and hold RESET until the mean airway pressure (Paw) at least 5 cm H₂O.
- 6.1.4 Adjust patient circuit calibration screw on right side of control model to achieve a mean pressure between 39–43cm H₂O.

6.2 Specifications:

- 6.2.1 Bias flow 0–40 L/m.
- 6.2.2 Mean airway pressure (Paw) 3–45 cm H₂O.
- 6.2.3 Frequency 3–15 Hz.
- 6.2.4 Inspiratory time 30–50%, by default 33% unless otherwise specified.
- 6.2.5 Power /Delta P 0–70 oscillator driver power.

6.3 Ventilators performance check:

Set frequency according to patient Age.

- Term neonates & infants 8–10

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مستند

د. محمد كوتوب

Abdullah



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□ Children 6-8

□ Adolescent 5-6

6.3.1 Set Bias flow

6.3.2 Depress RESET button long enough to allow map to increase above 6cm H₂O.

6.3.3 Set mean airway pressure (Paw) set 3-5 cmH₂O higher CMV's Paw and increase Paw as needed with no signs of over distention (9 ribs on chest X-ray).

6.3.4 Set Delta P until the wiggle factors is appropriate. (Wiggle factor is Visible Vibration from diaphragmatic line to groin area). It should be equal on both side of the chest and reassessed after patient positioning.

6.3.5 Attach patients with closed suction system.

6.3.6 Attach the ventilator with humidifier system.

6.3.7 Attach patients with the ventilator to start ventilation.

6.3.8 Manual adjustment to centralize the piston.

6.3.9 Arterial blood gas should be performed after 15 minutes of starting HFOV to guide further management.

6.3.10 Neither MDI (Meter Dose Inhaler) nor nebulizer can be applied on HFOV.

6.4 Suctioning:

6.4.1 Always use Y -Shaped closed suction system.

6.4.2 Suction is indicated for diminished chest wall movement indicating airway or ET tube obstruction or if there are visible/audible secretions in the airway.

6.4.3 Avoid in the first 24 hours of HFOV, unless clinically indicated.

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6.4.4 Avoid open suction.

6.4.5 Avoid hand-bagging during the suctioning procedure.

6.4.6 Increase FiO₂ following the suctioning procedure.

6.4.7 MAP may be temporarily increased 2–3cm H₂O until oxygenation improves.

6.4.8 If manual hyperventilation is needed, it should be done with PEEP equipped bag.

6.5 Weaning:

Wean to conventional ventilation when all of the following have been satisfied:

6.5.1 Pneumothorax and /or PIE have resolved if present.

6.5.2 Reduce FiO₂ to 40–60% before weaning Paw (except when over-inflation is evident or with air leak syndrome).

6.5.3 Reduce Paw in 1–2cm with each step and do not wean too rapidly.

6.5.4 Paw has been weaned to \leq 20cm H₂O range.

6.5.5 Delta P has been weaned to less than 30cm H₂O.

6.5.6 Do not wean the frequency.

6.5.7 Blood gases have been stabilized in the following ranges:

□ PH 7.25 –7.45.

□ Pa CO₂ 35–45 mm Hg.

□ Pa O₂ 50–80 mm Hg.

6.5.8 When the patient is converted back to conventional ventilator Paw should be less than 2–3 on HFOV.

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6.5.9 It is recommended to continue HFOV for at least 12-24 hours after weaning targets have been achieved.

7. Documentation Requirements:

None.

8. References:

- New England Medical Center: www.nemc.org
- Visas Healthcare: www.viasishealthcare.com
- [Http//neonatal.peds.washington.edu](http://neonatal.peds.washington.edu)
- www.cardinal.com
- <http://www.adhb.govt.nz/newborn/guidelines/respiratory/HFOVv/HFOV>
- ATOTW 261-High Frequency Oscillatory Ventilation 2012
- Textbook of Clinical Pediatrics Authors: Elzouki, A.Y., Harfi, H.A., Nazer, H., Oh, W., Stapleton, F.B., Whitley, R.J. 2012 – Pediatric Critical Care (Fourth Edition) 2011

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