

British Thoracic Society

Figure 1 Summary for providing acute NIV

Indications for NIV for NIV

Contraindications

NIV SETUP

NIV Monitoring

bronchodilators and If persisting after pC02 >6.5 pH < 7.35 COPD RR>23

controlled oxygen therapy

Neuromuscular disease

RR > 20 if usual VC <1L even pH < 7.35 and pC02>6.5 Respiratory illness with if pC02<6.5

reduce pC02

Need for IV sedation or

pH <7.35, pC02>6.5, RR>23

Obesity

Daytime pCO2> 6.0 and

somnolent

adverse features indicating need for closer monitoring and/or possible difficult intubation as in OHS,

Absolute

Severe facial deformity Fixed upper airway obstruction Facial burns

Relative pH<7.15

Cognitive impairment (warrants enhanced Confusion/agitation adverse feature) GCS &

Indications for

observation)

AHRF with impending

chest wall movement or NIV failing to augment

Inability to maintain Sao2 > 85-88% on NIV

(pH<7.25 and additional

referral to ICU respiratory arrest

Mask

Full face mask (or own if home user of NIV)

Initial Pressure settings

Note: Home style ventilators CANNOT provide > 50% inspired oxygen.

Aim 88-92% in all patients

Oxygenation

on disconnection from NIV consider IMV. If high oxygen need or rapid desaturation EPAP: 3 (or higher if OSA known/expected)

IPAP in copp/oHs/KS 15 (20 if pH < 7.25)

adequate augmentation of chest/abdo movement and slow RR Up titrate IPAP over 10-30 mins to IPAP 20—30 to achieve

IPAP should not exceed 30 or EPAP 8* without expert review

IPAP in NM 10 (or 5 above usual setting)

Backup rate

Backup Rate of 16-20. Set appropriate inspiratory time

I:E ratio

OHS, NM & CWD 1:1 COPD 1:2 to 1.3

Inspiratory time

1.2-1.5s OHS, NM & CWD 0.8-1.2sCOPD

Taper depending on tolerance & ABGs over next 48-72 hours Use NIV for as much time as possible in 1st 24hours.

SEEK AND TREAT REVERSIBLE CAUSES OF

* Possible need for EPAP > 8

obstruction or to maintain adequate PS when high EPAP kyphoscolios, oppose intrinsic PEEP in severe airflow Severe OHS (BMI >35), lung recruitment eg hypoxia in severe

Refer to ICU for consideration IMV if

Asthma/Pneumonia NIV Not indicated

increasing respiratory rate/distress

pH <7.35 and pC02 >6.5

pH <7.25 on optimal NIV Red flags

RR persisting > 25

New onset confusion or patient distress

Actions

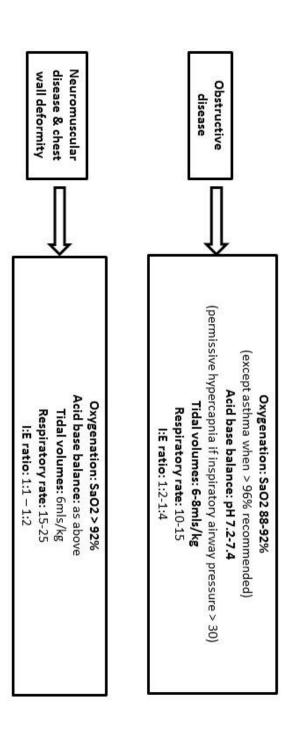
Check synchronisation, mask fit, exhalation port: give physiotherapy/bronchodilators, consider anxiolytic

CONSIDER IMV



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Figure 2 Guide to initial settings and aims with imv



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Figure 3: The three phases of patient management in AHRF

Immediate Clinical Assessment

Oxygenation target 88-92%

Acid –Base Status?

Evidence of other organ dysfunction?

Co-morbidities?

Administer steroids, bronchodilators, antibiotics as indicated and get specialist therapy help for NM/OHS patients.

Consider predisposition to AHRF [link with HMV team]

Enquire about advanced care plans (confirm or commence discussion)

Assisted Ventilation Plan

0.10

Intubation and transfer to ICU for IMV

NIV with transfer to ICU as risk of requiring IMV

NIV before/after transfer to NIV unit

NIV before/after transfer to acute ward with specialist support

Non implementation or discontinuation of assisted ventilation

Review patient and family wishes Ensure NIV experienced*clinical input and assistance of ICU if needed

Use locally agreed protocols for AHRF management

Ensure frequent review of progress and agreed avenues for escalation or de-escalation

Document care plans and audit outcomes

*A NIV experienced clinician will have undergone specific training and be able to demonstrate possession of all of the appropriate competencies.

Recovery and discharge

Review reasons/route of admission and consider methods to improve if these were problematic

Discuss future care planning with patient/family and inform community services of the result of such discussion.

Arrange early specialist review, pulmonary rehabilitation & help with smoking cessation as indicated

Provide warning card/inform ambulance services re future need for controlled oxygen therapy

Consider referral to home NIV service eg NMD cases or suspected sleep disordered breathing

Learn from any identified mistakes through multi professional review.

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