



Charisma

High-flow CPAP solution



Homecare
PNEUMOLOGY
Neonatology
Anaesthesia
INTENSIVE CARE VENTILATION
Sleep Diagnostics
Service
Patient Support

charisma

High-flow CPAP solution

Evidence



„CPAP therapy should be the primary treatment for patients with hypoxemic ARF due to cardiogenic pulmonary edema.“

German Respiratory Society: Clinical Practice Guideline „Non-invasive Mechanical Ventilation in Acute Respiratory Failure“. Hanover 2008, p.27



„The use of CPAP is expedient for avoiding intubation and improving the condition of immunosuppressed patients.“

German Respiratory Society: Clinical Practice Guideline „Non-invasive Mechanical Ventilation in Acute Respiratory Failure“. Hanover 2008, p.30

Areas of application



NASAL CPAP

Nasal CPAP for ventilation as a low-compliance transition from prolonged weaning to respiratory therapy.



DRUG NEBULIZER

Effective drug nebulization in CPAP therapy with continuous flow in respiratory therapy applications.

Application areas

IMC

General care units



„CPAP can be used for treating hypoxemia in intensive care for post-traumatic cases with or without thoracic involvement.“

German Respiratory Society: Clinical Practice Guideline „Non-invasive Mechanical Ventilation in Acute Respiratory Failure“. Hanover 2008, p.30



„CPAP therapy reduces the intubation rate and the level of hypoxemia after abdominal surgery. The probability of pneumonia and sepsis was reduced.“

German Respiratory Society: Clinical Practice Guideline „Non-invasive Mechanical Ventilation in Acute Respiratory Failure“. Hanover 2008, p.50



HIGH-FLOW CPAP

High-flow CPAP with high continuous flow for CPAP applications with masks, nasal devices, and helmets.



HELMET VENTILATION

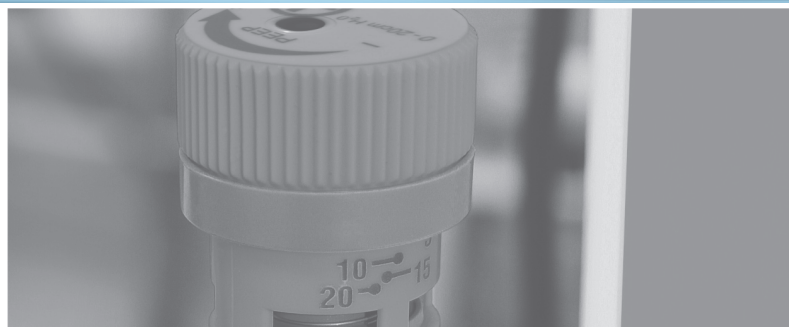
Continuation of NIV therapy in spite of mask-related complications as a supplementary therapy option.

Emergency room

Physical therapy

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High-flow CPAP solution



„In the presence of leakages, pressure cannot be held constant.“

German Respiratory Society: Clinical Practice Guideline „Non-invasive Mechanical Ventilation in Acute Respiratory Failure“. Hanover 2008, p.31

„The use of PEEP or CPAP can help prevent end-expiratory collapse.“

German Respiratory Society: Clinical Practice Guideline „Non-invasive Mechanical Ventilation in Acute Respiratory Failure“. Hanover 2008, p.31

Compensate leakage

It is a special challenge in CPAP therapy to compensate mask-related leakages. Even short-term pressure drops of just 0.2 to 0.4 seconds may lead to the collapse of alveolar areas. With its comprehensive dynamic leakage compensation of up to 200 liters per minute, charisma prevents drops in airway pressure below the lower inflection point and thus helps avoid alveolar collapse hypoxemia.

Avoid alveolar collapse

The treatment objective for hypoxemia resulting from acute respiratory failure is to improve lung ventilation. CPAP can help to avoid the end-expiratory collapse of alveolar areas and to rebalance the pathologically reduced functional residual capacity (FRC). The therapeutic increase of the FRC frequently results in improved compliance and therefore, reduced work of breathing.

Optional products

1. Paramagnetic oxygen sensor
2. Extended safety package
3. Cart
4. Tube set I
5. Drug nebulizer
6. Nasal CPAP mask straps
7. Aircon respiratory gas humidifier

I. Paramagnetic oxygen sensor



The optional paramagnetic oxygen sensor provides precise monitoring of the oxygen content, even with demanding high-flow CPAP therapy. This new procedure for FiO₂ monitoring requires no consumables or user calibrations.



„Helmet CPAP is the alternative for treating hypoxemic ARF, especially in case of mask complications.“

German Respiratory Society: Clinical Practice Guideline „Non-invasive Mechanical Ventilation in Acute Respiratory Failure“. Hanover 2008, p. 68

„Nasal CPAP can improve oxygenation and lung mechanics.“

German Respiratory Society: Clinical Practice Guideline „Non-invasive Mechanical Ventilation in Acute Respiratory Failure“. Hanover 2008, p.48

Complete the weaning process - helmet CPAP

Mask-related complications occur with greater frequency the longer a course of CPAP therapy takes, which often leads to escalating measures. Helmet CPAP therapy offers a patient-friendly alternative and can help avoid intubation and reduce lethality. Helmet CPAP therapy can also be used as a preventive approach for avoiding mask-related problems and allows for the safe application of higher PEEP levels. It is well accepted by patients as a supplementary therapy option, since helmet CPAP significantly reduces eye irritation and stomach bloating. To avoid any undesired CO₂ rebreathing, charisma is equipped with a high-flow CPAP system with adjustable flush flow.

Complete the weaning process - nasal CPAP

As a supplement to mask and helmet applications, nasal CPAP – with the corresponding positive end-expiratory pressure (PEEP) setting – represents an interesting therapy option. In contrast to CPAP therapy with low PEEP settings, nasal CPAP with settings of 9-10 cm H₂O leads to a rise in the oxygenation index without hemodynamic effects. The literature documents reduced stays in intensive care and clinical settings as a consequence. In addition, nasal CPAP allows for prolonged application within the scope of weaning and for post-operative respiratory therapy.

2. Extended safety package



While conventional CPAP therapy is often performed in intervals, ICU patients frequently require continuous application. The extended safety package includes a rechargeable battery option that allows for continuing the therapy for at least 60 minutes in case of short-term power outages. At the same time, the integrated power failure alarm enhances patient safety.

3. Cart



The matching cart accommodates the high-flow CPAP device and an inspired gas conditioner for mobile use in the clinic. Optional add-on boxes can store filters or masks.



„Early use of CPAP immediately after extubation can significantly reduce the re-intubation rate and further complications in patients who are at higher risk of post-operative hypoxemic ARF.“ (Evidence level B)

German Respiratory Society: Clinical Practice Guideline „Non-invasive Mechanical Ventilation in Acute Respiratory Failure“. Hanover 2008, p.46

„Aerosolized medication under CPAP therapy can optimize drug treatment.“

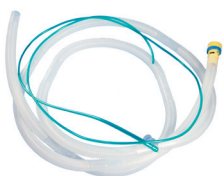
Prevent pneumonia

Atelectasis resulting from general anesthesia frequently persists for the first post-operative days. The resulting post-operative restriction of pulmonary function depends on patient-specific risk factors (COPD, age, smoking, ASA status) and the duration of surgery (> 3 hours). The intermittent use of mask CPAP for quick restoration of lung volumes is a decisive step to help minimize the risk of post-operative pneumonia and other pulmonary complications.

Aerosolize medications

CPAP therapy and drug nebulizing with continuous flow can be combined for the benefit of patients. The combination of both methods can enhance intrapulmonary efficacy and thereby optimize drug therapy. Drug nebulization under CPAP therapy is easy to handle and does not require any trigger mechanisms for nebulizer control.

4. Tube set I



The pre-configured tube set is designed for intermittent CPAP therapy with a mask.

The integrated PEEP valve is designed for high-flow CPAP therapy and can be fitted with a corresponding HME filter or drug nebulizer if necessary. Further tube sets for continuous use and the inspired gas conditioners of various manufacturers are available.

5. Drug nebulizer



The high-quality nebulizer can be filled with ready-to-use drug solution during ongoing therapy. The integrated safety valve prevents potential pressure loss and therefore rules out reflex alveolar collapse. The clear drug chamber enables early detection of possible incompatibilities.

The images contains optional accessories which can be ordered in addition. (Please inquire further information.)

- Integrated drug nebulizer
- High pressure constancy
- Leakage compensation of up to 200 l/min
- Intelligent alarm management
- Oxygen sensor for FiO_2 monitoring without consumables
- Helmet CPAP, mask, and nasal modes

Functions:

- Helmet CPAP
- High Flow CPAP
- CPAP
- HFOT



6. Nasal CPAP mask straps



The CPAP mask strap was specifically developed for long-term nasal therapy. The various sizes (2 / 3 / 4) allow for precise anatomical adjustment and ensure high wearing comfort. The design of the CPAP mask strap prevents mechanical trauma to the nasal mucous membranes and is compatible with all conventional heated tube systems.

7. Aircon respiratory gas humidifier



The Aircon respiratory gas humidifier combines modern technology and innovative design in a high performance unit. Thus, it fulfills the medical requirements and the economic expectations of the market. The result is optimal physiologically conditioned respiratory gas, which protects the mucous membranes of the ventilated patient from drying out and prevents interference with the mucociliary clearance.

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