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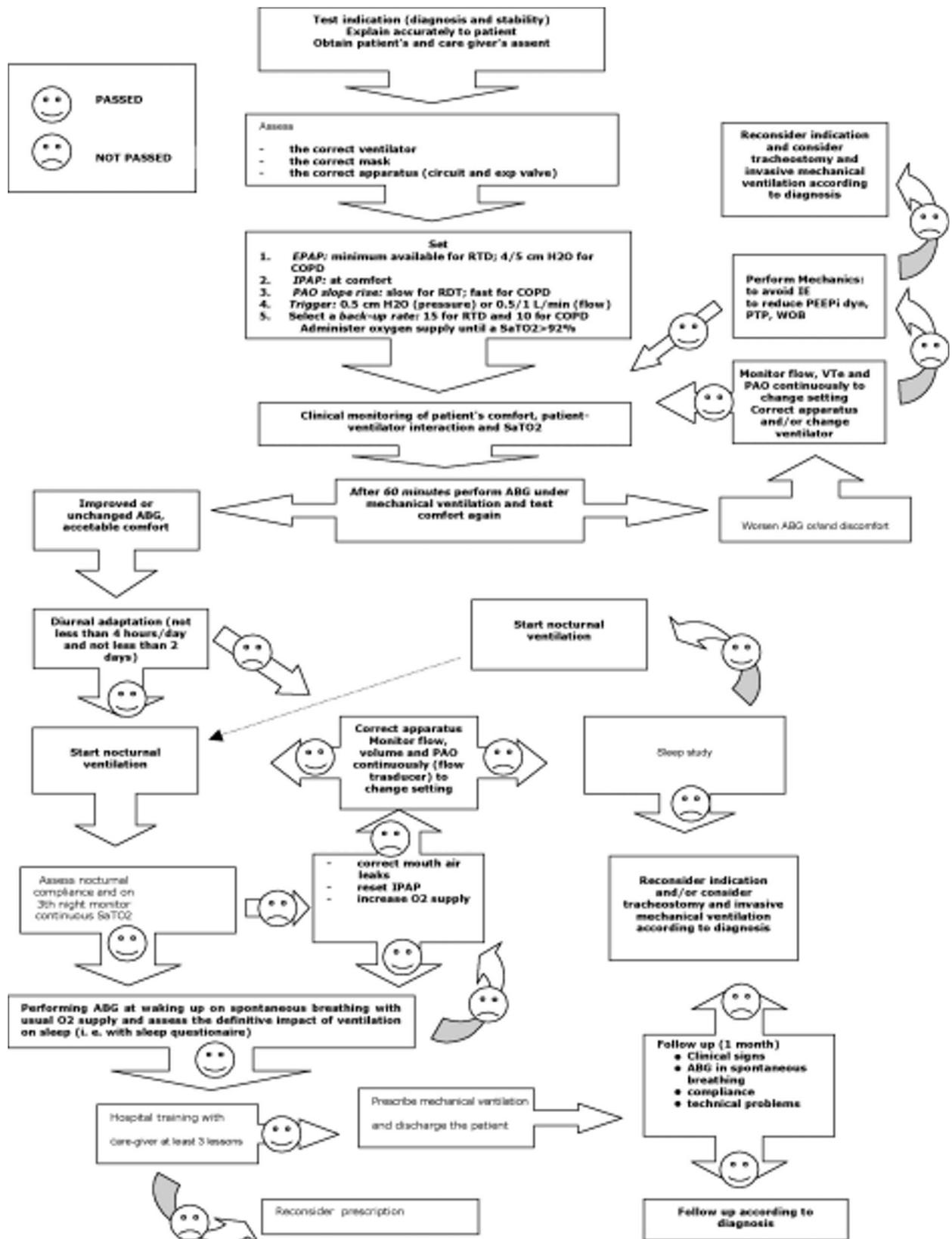
The prescription of an home ventilator according to different diseases: from setting to family training

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In recent years, guidelines have been published in order to define indications, applications and delivering of long-term mechanical ventilation (MV). Noninvasive positive pressure ventilation (NPPV) has been increasingly used in the management of chronic respiratory insufficiency both in restrictive than in obstructive patients. Side-effects due to the interface may impact the follow-up of these patients in 20 to 50 % of cases and account for an important problem dealing with discontinuation and lacking of compliance. Nonetheless, selection of patients, modalities of ventilation, types of ventilators and their setting, have been claimed to account for these conflicting results. It is has been described that only 50% of patients with COPD continued to use NPPV during prolonged follow-up of approximately 6 months. In the clinical practice, home NPPV is prescribed as nasal pressure support ven-

tilation (NPSV), and is set to achieve a decrease in PaCO₂ and an optimal patient's compliance. We recently demonstrated that when compared to unassisted breathing both settings (at patient's comfort, or the physiological setting) induced a significant improvement in minute ventilation and in diaphragm activity as assessed by the diaphragmatic pressure-time product (PTP); evaluation of lung mechanics and respiratory muscle function may result in reduction in ineffective inspiratory efforts. Home NPPV is often prescribed after in-hospital practice sessions performed with the commercial ventilators available at the moment (often a single one), which may be not necessarily that used by the patient at home. In our laboratory we undertook a study to compare the patient-ventilator interaction and patient comfort with different commercial bi-level pressure home ventilators. We con-



cluded that, in stable awake patients with chronic ventilatory failure, all these ventilators are well tolerated (despite a great intersubject variability in comfort), and produce similar physiological effects thus fulfilling the aims of mechanical ventilation. For that reason the choice of the ventilator for home NPPV should be done after comparison of different ventilators, “tailored” to the individual patient.

The figure try to summarizy the operative flow chart to set and to monitor an home mechanical ventilator prescription in a CRF patient from the first hour of adaptation to the home follow up. In particular cardiorespiratory monitoring, portable polysomnography or complete polysomnography with a technician represent different steps to perform diagnosis of OSAS and to titrate correctly CPAP prescription.

Only when an acceptable ABG response, a nocturnal SaTO₂ monitoring, a sufficient compliance to nocturnal ventilation is given, an hospital training for patient and caregiver is mandatory. The multidisciplinary team (doctor, nurse, RT, psicologist) has as main end points the explanation how the ventilators works, the side effects, the humidifications problems, the apparatus cleaning and the trachestomy care. These lessons (no less than 6 ones of 30 minutes each) need clarity and a final test to verify the family’ level of comprehension. Only at this time the physician may prescribe the ventilator and discharge the patient. A strict follow up according to diagnosis to confirm or reconsider indication and to flow the time course of the program is necessary.

In conclusion a correct home MV program needs:

- 1) a well documented diagnosis and indications
- 2) a well documented test to correct set and apparatus of the ventilator in hospital and after 60 days since discharge
- 3) a strict test to verify patient’s adherence and a program of re-force the prescription every year.

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