ASSISTED MECHANICAL VENTILATION THROUGH REMMER NASALMASK BRINGS COMFORTABLE SLEEP AND IMPROVED ALVEOLAR VENTILATION IN MODERATE RESPIRATORY INSUFFICIENCY DUE TO RESTRICTIVE LUNG DISEASE.

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4th international conference on home mechanical ventilation, Abstract, LYON 1993

Respiratory muscle involvement might cause chronic alveolar hypoventilation and respiratory failure in several chronic neuromuscular disorders and residuals after prior polio. Chronic hypoventilation might cause an insidious development of incapacitating symptoms including severe reduction of physical and mental capacity due to nocturnal blood gas and sleep disturbance. Assisted mechanical night-time ventilation through an individually fitted REMMER nasal mask, is now an improved non-invasive technique and brings comfortable sleep, minimal leakage without causing tissue damage, compensated gas exchange and increased subjective well- feeling. To provide a mask model an impression of the nose is used to make plaster model. Air is delivered through two plastic tubes. Since this tube also form parts of the mask's attachment complex, the shape of (in actual fact, the nose/ ear angle) is, important. The mask is cast in visible light-curing acrylic. The mask is long lasting, more than 3 years. The individually formed headgears hold the mask in position through tube attachments on both sides of head. This is to ensure that the line of traction lies at the correct angle and that maximum tightness of seal is obtained. Since 1990 patients (n = 63) with restrictive lung disease have been offered assisted mechanical ventilation (MV) at home with individually fitted **REMMER nasal mask**. The cooperation between technical and medical staff has brought improved quality of care and follow-up of treatment with individually fitted aids. of the patients, 70 % have been trained policlinically in an outpatient unit. Mean age was 56 years (range 7-78). Their main diagnoses was a previous history of Poliomyelitis with sequelae (n = 31) Neuromuscular diseases (n = 16) Kyphoscoliosis (n = 5) Status post pulmonary TBC (n = 7) and others (n = 4). Vital capacity at the start of therapy was 1.4 liters (range 0,35 - 4,1)

RESULTS: During 36 months, 63 patients started therapy. Up to dec-1992, 51 patients have been treated for more than 6 months at home with MV and **REMMERMASK®** (6 have died). Patients who regularly use MV (n = 40) have been interviewed in reference to such symptoms as chronic fatigue, morning headache, daytime drowsiness, depression/irritation, sleep disturbance. And (n = 40) patients have been surveyed about air leakage, smarting pain, wounds, pressure injuries, headgear, fitness/handle and care. of the surveyed patients, 16 percent reported leakage, 12 percent smarting pain and 12 percent pressure injuries. Complains of headgear from 17 percent of patients. No wounds reported and more than 90% of the patients are satisfied with the fitness and handle of the mask. About 72 percent of 40 patients who regulary use MV report reduction in symptoms (more than 3 hours of use/ day). Blood gases have been analyzed before start of therapy and after at least 6 months of therapy with MV. The results shows tendency to improvement in carbon dioxide tension (PC02) oxygen tension (P02) and oxygen saturation (Sa02)

Conclusion: Assisted MV with **REMMERMASK®** can be applied policlinically in moderate chronic respiratory insufficiency with co-operating technical and medical staff. Reduction in symptoms of alveolar hypoventilation and improvement in blood gases can be expected after 6 months of treatment.

2003-01-31