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**ASSISTED MECHANICAL VENTILATION THROUGH INDIVIDUALLY FITTED NASAL MASK IMPROVES ALVEOLAR VENTILATION IN RESPIRATORY INSUFFICIENCY**

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Hypoventilation night-time during sleep can be expected among patients with chronic respiratory muscle weakness, especially as a late complication to polio or neuromuscular disorders. At a large stage this causes impairment in also daytime gas exchange. Method: Since 1990 we have offered assisted mechanical ventilation at home through an individually fitted **Remmer nasal mask**<sup>®</sup> to 67 patients, mean age 56 y, range 7-78 y. They were supported with technical and medical staff at the Respiratory Unit. Main diagnoses were: a previous history of poliomyelitis with sequelae (n=33) or tuberculosis (n=7), neuromuscular disease (n=18), kyphoscoliosis 0-5), and others n=4).

**Results:** Abnormal daytime arterial blood gas ( $\text{PaO}_2 < 8.0$  kPa, or  $\text{PaCO}_2 > 6.5$  kPa) was found before start of therapy in 16 of 67 patients, and 3 of 16 patients had to be tracheotomized. Mean vital capacity for 15 of 16 patients at the start of therapy was 1.2 L (range 0.35-3.42). Arterial blood gases (n=16) during daytime spontaneous ventilation before start of therapy was  $\text{PaO}_2$   $7.8 \pm 0.4$  kPa and  $\text{PaCO}_2$   $7.9 \pm 0.3$  kPa. After >6 months of therapy we found an improved ( $p < 0.01$ )  $\text{PaO}_2$   $9.5 \pm 0.6$  kPa, and reduced ( $p < 0.01$ )  $\text{PaCO}_2$  to  $6.8 \pm 0.2$  kPa during daytime spontaneous breathing in the 16 patients referred to above.

**Conclusion:** Assisted MV with a **Remmer nasal mask**<sup>®</sup> can be applied polyclinically in respiratory insufficiency. Improved daytime gas exchange during spontaneous ventilation can be expected >6 months of therapy correcting night-time hypoventilation.

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