

Evaluation of lung recruitment maneuvers in Acute Respiratory Distress Syndrome using computer simulation

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The online data supplement for this paper contains additional material that could not be included in the main text due to space limitations, and is divided into three files. The first file (additional file 1) describes in detail the simulation model employed in the paper. Additional file 2 presents the optimization strategy used in matching the model to the ARDS patient data and the parameter values for the different models. Additional file 3 reports the effects on $\text{PaO}_2/\text{F}_1\text{O}_2$ of changes in haemoglobin levels, cardiac output, and F_1O_2 for the MRS-10 RM applied to patient A and presents some further model validation results.

Additional File 3: Additional figures and experiments

The PF ratio observed in patient A with changes in the hemoglobin concentration, cardiac output and F_1O_2 for the MRS-10 RM is shown in Figure A3.

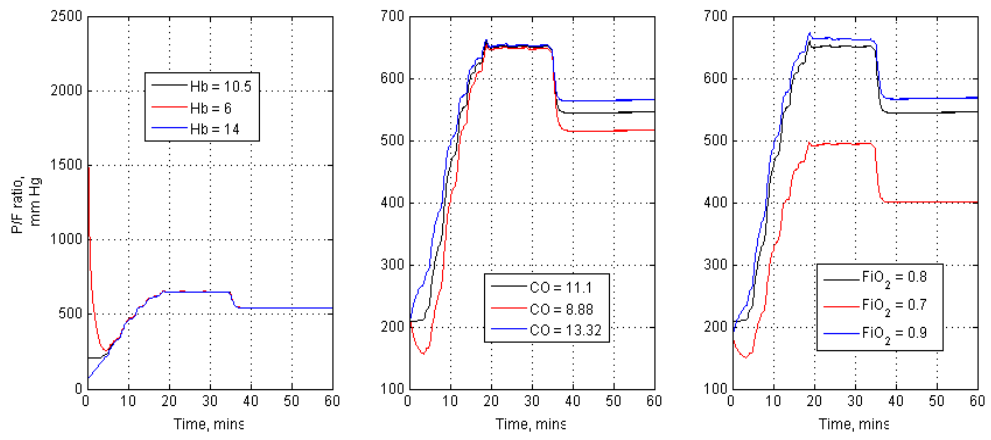


Figure A3: PaO₂/F_iO₂ resulting from changes in (left) haemoglobin levels (Hb, g dl⁻¹), (center) Cardiac output (CO, l min⁻¹) and (right) F_iO₂ for MRS-10 in patient A.

The dynamic compliance response of Patient A and Patient B for a PEEP titration procedure identical to the one given in Suarez-Sipmann 2007¹.

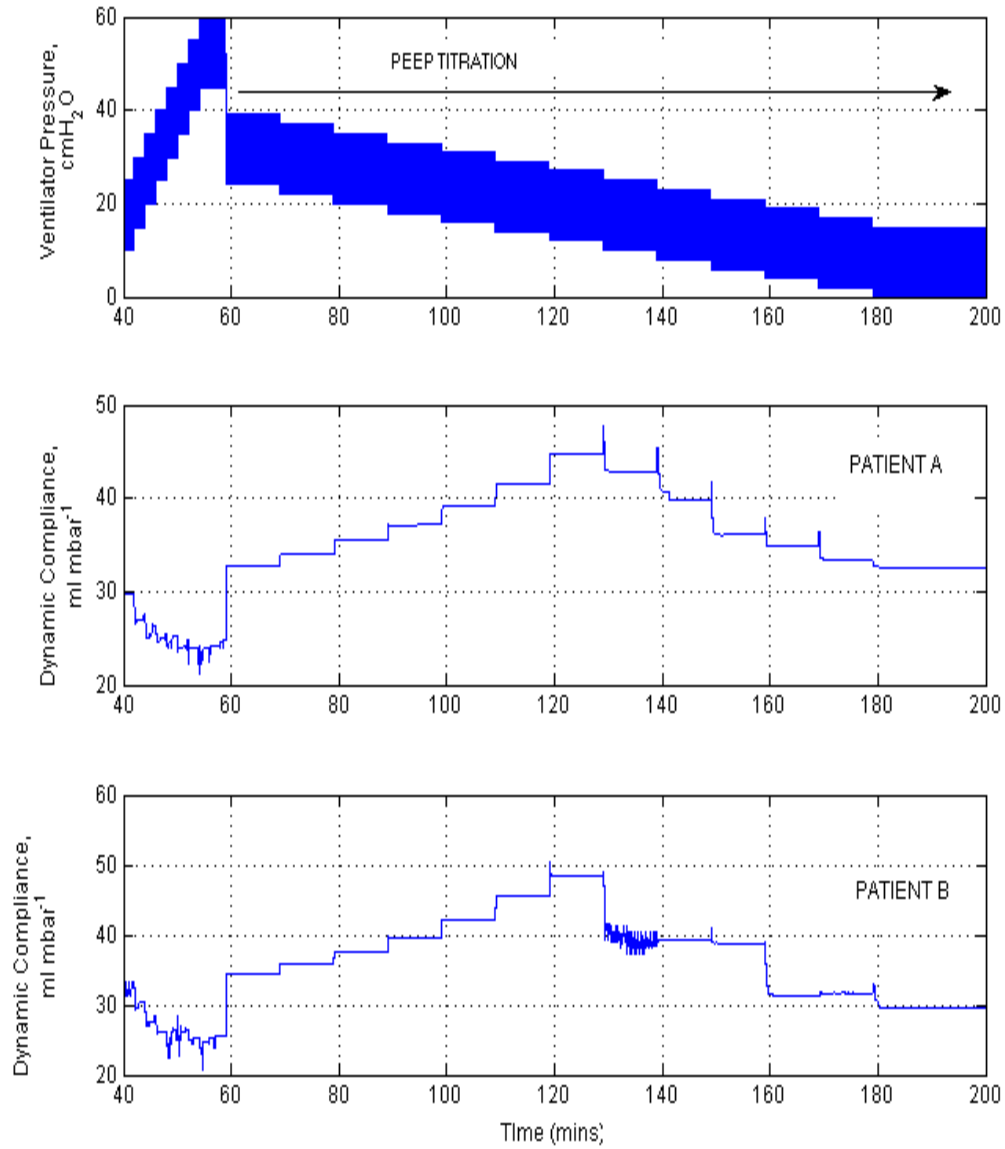


Figure A4: (top) The ventilator pressure waveform of PEEP titration after the recruitment phase, (center) the corresponding dynamic compliance response of the patient A and (bottom) the corresponding dynamic compliance of patient B.

¹ Suarez-Sipmann, Fernando, et al. Use of dynamic compliance for open lung positive end-expiratory pressure titration in an experimental study. *Critical care medicine* 2007;35(1): 214-221.