Lung protective mechanical ventilation in paediatric cardiac surgery

Thierry V. Scohy

Department of Anesthesia and Intensive Care, Amphia Hospital, Breda, The Netherlands

General anaesthesia is known to promote atelectasis, which leads to reductions in lung volume, lung compliance and arterial oxygenation [1]. The goal of mechanical ventilation is to establish an acceptable level of gas exchange, while preventing ventilator-induced lung injury (VILI). Atelectotrauma, causing VILI is avoided by preventing repetitive re-opening of atelectatic lung areas and thus by decreasing alveolar stress [2]. Optimizing alveolar recruitment by alveolar recruitment strategy (ARS) and maintaining lung volume with adequate positive end-expiratory pressure (PEEP) prevents lung injury by decreasing alveolar stress [3-5]. In our previous study we proved that ARS + PEEP of 8 cm H2O significantly decreased ventilation perfusion mismatch and improved dynamic compliance of the respiratory system (Crs), oxygenation and end-expiratory lung volume (EELV), in children under general anesthesia [6].

According to our results lung protective mechanical ventilation can safely been applied in children.

References

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