



Fundamental concepts and latest evidence of transpulmonary pressure monitoring

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Esophageal pressure can be used for a variety of applications for patients undergoing mechanical ventilation. This lecture will focus on the physiologic principles in monitoring esophageal pressure as a surrogate for pleural pressure. This includes calculation of effort or work of breathing and estimation of trans-pulmonary pressure during both dynamic and static conditions. These data can be used to guide ventilator management practices to select Positive End-Expiratory Pressure, to ensure appropriate limits on driving pressure or tidal volume, to attempt to protect the diaphragm to prevent ventilator induced diaphragm dysfunction, and to quantify patient-ventilator asynchrony. We will review all these concepts and discuss recent investigations which have highlighted these principles. We will also discuss limitations of esophageal manometry, and different methods employed to overcome some of these limitations.