

嚴重社區感染肺炎:流感

Severe community-acquired pneumonia : influenza

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Patients with influenza pneumonia who need mechanical ventilation are at high risk of rapid progression to acute respiratory distress syndrome (ARDS). For 2009 pandemic H1N1 virus infection, 49% to 72% of patients admitted to ICU had complicated with ARDS. The standard management of ARDS is lung protective strategy with low tidal volume and higher positive end-expiratory pressure (PEEP). Severe influenza pneumonia-related ARDS could be suffered from refractory hypoxemia with failure of routine care in some patients. “Rescue” strategies such as prone positioning and extracorporeal membrane oxygenation (ECMO) are reserved for these severe ARDS patients to attempt to alleviate hypoxemia.

Despite attempts to optimize ventilator settings, some patients developed refractory hypoxemia or hypercapnia and received ECMO as a rescue therapy. However, uncertainty regarding the appropriate indication for ECMO in these patients still remains. Clinical evidence in support of ECMO as a rescue treatment for these patients is controversial. The reported incidence of patients with influenza A (H1N1)-associated ARDS transitioning from conventional ventilation to ECMO is extremely variable. Reports from Australia and New Zealand and from France indicate that patients on ECMO were 34 and 50% of the mechanically ventilated patients, respectively. In Hong Kong and Canada only 6% of the patients were shifted from conventional ventilation to ECMO. The majority of patients requiring ICU admission met criteria for ARDS and case fatality ratio was estimated at less than 0.5%.

Prone positioning has been shown to improve gas exchange and oxygenation in adult patients with ARDS. Some pathophysiological mechanisms have been suggested to explain these effects, including even distributed of gravitational gradient in transpleural pressure, improved ventilation and perfusion mismatching, and reduced the lung stress and ventilator-induced lung injury. A multicenter prospective randomized controlled trial (PROSEVA study) revealed that prone positioning decreased 28-day and 90-day mortality in patients with severe ARDS. The meta-analysis studies concluded that prone positioning is an effective therapy to reduce mortality when applied early with a lung protective strategy and longer durations in severe ARDS.

As stated by the World Health Organization in 2016, there was a significant

increasing of influenza cases in the first quarter globally. In Taiwan, an influenza epidemic spread between January 2016 and March 2016. According the annual report of Centers of Disease Control Taiwan, totally there were 1,735 patients admitted to ICU for complicated influenza infection in the first three months of 2016. It is a great challenge to the health care system to handle this suddenly increasing in influenza-related critically ill patients especially complicated with ARDS.