Improved understanding of ARDS mechanism may offer an opportunity to advance patient care

ARDS is a heterogeneous condition with a variety of outcomes, and because of this it is not straightforward to provide a treatment, said Professor Bellingan. “We need a drug that works on the inflammatory processes, capillary leakage processes and the thrombotic processes — all of which happen in ARDS. If we can develop this, then it should help reduce the high mortality, which is where we need to focus our efforts.”

Professor Bellingan explained that “ARDS is a condition associated with many different causes (e.g. pneumonia, sepsis and major trauma) that make it difficult to diagnose. With such challenges, it is no wonder that ARDS is one of the key local areas at the ISICEM meeting this year. An estimated >300,000 people develop ARDS in the USA and EU annually. It is a major cause of death, with mortality rates 27–45%, and has long-term health and social implications for survivors, which can persist for at least five years.”

The physical impact of ARDS can also result in significant impairments to quality of life, “with survivors experiencing polyneuropathy involving weight loss and weakening of the muscles. Furthermore, the psychological impact is another concern.”

ARDS is diagnosed based on the Berlin definition, where fluid from surrounding tissues enters the lungs, and there is also help reduce these additional costs for patients. Understanding mechanisms driving ARDS Researchers are beginning to make promising inroads into better understanding of the mechanisms that drive the occurrence of ARDS. Regardless of the etiology, all patients with ARDS have had an inflammatory stimulus, a compromised endothelial barrier that allows protein-rich fluid from surrounding blood vessels to leak into the lung fluid. This impairs the oxygenation of the blood stream, starves vital organs and leading to hypoxia.

Professor Bellingan explained further: “If the patient has edema, cellular enzymes and pores in the lungs try to re-absorb the fluid. It’s not just a capillary leak, but in ARDS patients there is also tissue damage that was tissue injury and the tissue is being repaired. The direct hospital costs from ARDS are estimated at approximately £820 billion in hospitals. The impact on long-term quality of life also has economic implications. In treating ARDS, the ability to return to work and maintain employment, Commenting on the economic implications of treating ARDS effectively, Professor Bellingan explained that, “Since ARDS impacts people of all ages, in caring for ARDS you are saving the lives of both young and old.”

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