

## **A Theoretical to Conceptual Paper: The Use of Phosphodiesterase Inhibitors, Endothelin Receptor Antagonists and/or Prostacyclin Analogs in Acute Pulmonary Embolism**

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**Abstract :** In cases of massive pulmonary embolism, defined as acute pulmonary embolism presenting with systemic hypotension or right ventricular dysfunction and impending failure, there is indication that unconventional therapies, such as phosphodiesterase inhibitors, endothelin receptor antagonists, and/or prostacyclin analogs may decrease the morbidity and mortality. Based on the premise that dilating the pulmonary artery will decrease the pulmonary vascular pressure, while simultaneously decreasing the aggregation of platelets, it can be hypothesized that increased blood flow through the pulmonary artery will decrease right heart strain and subsequent morbidity and mortality. While this theory has yet to be formally studied, the recommendations for treating massive pulmonary embolism with phosphodiesterase inhibitors, endothelin receptor antagonists, and/or prostacyclin analogs in conjunction with the current standards of care in massive pulmonary embolism should be formally studied. In particular, patients with massive PE who are unable to undergo thrombolysis/surgical intervention may be the ideal population to study the use of these treatments to determine any decrease in mortality and morbidity (short term and long term).

**Keywords :** acute pulmonary thromboembolism, treatment of pulmonary embolism, use of phosphodiesterase inhibitors, endothelin receptor antagonists, prostacyclin analogs in PE

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