Effect of Point-of-Care Management of Coagulopathy on Blood Clot Strength and Primary Graft Dysfunction in Lung Transplant Recipients

Abstract in English:

Introduction:

The key factors negatively affecting the function of the graft during lung transplantation are bleeding, administration of transfusion products, and ischemic/reperfusion injury. Given that all these attributes represent a significant risk for the primary graft dysfunction development. It is desirable to have a sophisticated anesthesiological approach available that will reduce blood loss and consumption of transfusion products, thereby reducing the incidence of primary graft dysfunction (PGD).

Methodology:

This prospective, randomized study evaluated 67 patients from January 2018 to June 2020. We compared the outcomes of patients undergoing lung transplantation who were treated using a point-of-care (POC) approach aimed at targeted diagnosis and treatment of coagulopathy, combined with volumotherapy using 5% albumin, against traditional management based on clinical experience in the non-POC group.

Results:

In the POC group, there was a significant reduction in perioperative blood loss and the need for blood derivatives. Concurrently, we noted an improvement in lung graft function, reflected by higher Horowitz Index values. There was also an improvement in circulatory stability, indicated by lower doses of norepinephrine. The incidence of primary graft dysfunction (PGD) was lower in the POC group compared to the non-POC group.

Conclusion:

The implementation of a targeted diagnostic and treatment approach to perioperative bleeding and coagulopathy using the Point-of-Care (POC) method, supplemented with volumotherapy with 5% albumin solution, can effectively reduce the consumption of transfusion products and contribute to the improvement of early outcomes in the field of lung transplantation without negative impact on long-term patient survival.

Key words: lung transplant, ROTEM, coagulopathy, bleeding, PGD, transfusion, POC, point of care