

# Severe complication from lung transplantation has been underestimated, researchers find

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PLS (passenger lymphocyte syndrome) is a potentially life-threatening risk in lung transplants that has hardly been researched and is often underestimated in clinical practice. However, the complication occurs more frequently than previously thought, as shown by a recent study at the Department of Transfusion Medicine and Cell Therapy in collaboration with the Department of Thoracic Surgery at MedUni Vienna and University Hospital Vienna.

The results, recently [published](#) in the *American Journal of Respiratory and Critical Care Medicine*, not only provide new insights into PLS, but also approaches for early detection and timely treatment.

The study is the most extensive research work on this topic to date. Relevant data and parameters from around 1,100 patients who received a lung transplant at the University Hospital Vienna between 2010 and 2021 were analyzed. As the results show, PLS occurs significantly more frequently in unequal ABO settings, i.e., with different blood groups of donor and recipient, than previously assumed.

PLS occurs when certain [white blood cells](#) (lymphocytes) from the donor's blood trigger hemolysis after transplantation; they destroy the recipient's red blood cells. Patients with PLS have significantly lower hemoglobin levels, are therefore more anemic and require blood transfusions twice as often as patients without PLS.

"Until now, it was assumed that only a few percent of patients were affected," reports principal investigator Günther Körmöczi (Department

of Transfusion Therapy and Cell Therapy).

"However, our detailed analysis of ABO-mismatched transplants revealed that depending on the specific blood group combination between donor and recipient, up to 30 percent of patients developed hemolytic reactions after lung transplantation." Blood group A patients who received [blood group O](#) transplants were particularly frequently affected.

These findings underline the urgency of careful monitoring of important parameters after lung transplantations in the ABO-unmatched setting in order to detect and treat hemolysis at an early stage. The [appropriate measures](#) for this (Coombs test, eluate test) were also described in the study.

"Immunohematological monitoring is indicated in ABO-unequal constellations in order to optimally care for patients after lung transplantation and provide them with adapted transfusion therapy," says Körmöczi, emphasizing the relevance of the results.

The study is a follow-up to the diploma thesis by first author Mirjam M. Kohl (Department of Transfusion Medicine and Cell Therapy) under the supervision of Günther Körmöczi and Stefan Schwarz, and thus marks a success not only in research but also in teaching at MedUni Vienna.

**More information:** Mirjam M. Kohl et al, High Rate of Passenger Lymphocyte Syndrome after ABO Minor Incompatible Lung Transplantation, *American Journal of Respiratory and Critical Care Medicine* (2023). [DOI: 10.1164/rccm.202306-1107OC](https://doi.org/10.1164/rccm.202306-1107OC)

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