

PRESS RELEASE

Cryobiopsy of the Lung Promises a High Degree of Safety for Patients

Clinical researchers at Karl Landsteiner University Krems (Austria) evaluate novel diagnostic technique prospectively for the first time in Europe

Krems, 04. March 2022 - For the first time, the high safety and low mortality of a still novel, simpler procedure for lung biopsies has also been shown in a European context. The so-called transbronchial cryobiopsy was performed in 75 patients in an Austrian clinic as part of diagnostic procedures. The occurrence of side effects and mortalities were then monitored and recorded over a period of 90 days. In addition to the high safety of cryobiopsy, a lower mortality of this method was also shown in comparison to surgical lung biopsy. The results have now been published in the journal Therapeutic Advances in Respiratory Disease.

The lung tissue is well protected in the chest cavity - which unfortunately also makes diagnostic methods more difficult. If tissue samples are needed, surgical lung biopsy is a proven procedure. However, the chest cavity must be accessed from the outside, which is time-consuming, bears a certain risk and is expensive, too. A recently developed procedure - transbronchial cryobiopsy - is simpler and cheaper. Here, a probe is inserted through the trachea and bronchi, and a piece of lung tissue is frozen to the probe and then removed. Up to now, there has been only scant data on the safety of this procedure. Now a team from the Karl Landsteiner University of Health Sciences Krems (KL Krems) has collected prospective data on safety and mortality - and found promising results.

High Safety & Reduced Mortality

"In fact, only a few well-treatable side effects occurred after transbronchial cryobiopsy. At the same time, mortality was lower than with alternative diagnostic procedures," says Klaus Hackner, senior physician at the University Hospital Krems of KL Krems and first author of the study - one of the few hospitals in Austria where this method is already routinely used. The observed side effects included above all an air leakage into the area between the lung and the chest wall, known as pneumothorax. This occurred in 20% of those treated. Bleeding of the bronchial tubes occurred in about 1/3 of the cases, but only one case required more intensive medical treatment.

Regarding the side effects, Hackner says: "We also found that various lung parameters - such as a reduced total lung capacity - can give indications of the risk of later side effects even

before the biopsy. This means that follow-up care can be organised accordingly in advance and the risks of the method can be reduced."

No Fatalities

The study provided impressive data regarding the mortality of the diagnostic procedure. Not a single death was recorded among the patients in the first 30 days after the cryobiopsy. This is in contrast to the mortality of the surgical biopsy, which was reported in other studies - with all the difficulty of exact comparability - with up to 4.5% after 30 days. Even after 90 days, the mortality of the cryobiopsy was lower than that of the surgical procedure, at 1.3%. Senior physician Klaus Hackner comments: "It must be said that this single death was not causally related to cryobiopsy, but was appropriately included in the study."

The team of the Department of Pneumology at the University Hospital Krems of KL Krems was in charge of the study. This is one of the few centres in Austria where modern transbronchial cryobiopsy is already performed and taught. With this study now published in Therapeutic Advances in Respiratory Disease, KL Krems once again demonstrates that it bases the use of state-of-the-art medical techniques on critical clinical evaluations that serve the patients' best interests.

Original publication: Transbronchial lung cryobiopsy: prospective safety evaluation and 90-day mortality after a standardised examination protocol. K. Hackner, A. Stadler, F. Schragel, V. Klamminger, B. Ghanim, A. Varga, P. Errhalt, Ther Adv Respir Dis, Vol. 16: 1–9 <https://doi.org/10.1177/17534666221077562>

About Karl Landsteiner University of Health Sciences

At Karl Landsteiner University of Health Sciences (KL) in Krems, the comprehensive approach to health and disease is a fundamental objective for research and teaching. With its Europe-wide recognized bachelor-master system, KL is a flexible educational institution that is tailored to the needs of students, the requirements of the labor market as well as the scientific challenges. Currently KL hosts about 600 students in the fields of medicine and psychology. The four university hospitals in Krems, St. Pölten, Tulln and Eggenburg ensure clinical teaching and research at the highest quality level. In research, KL focuses on interdisciplinary fields with high relevance to health policy - including medical technology, molecular oncology, mental health and neuroscience, as well as water quality and related health aspects. KL was founded in 2013 and accredited by the Austrian Agency for Quality Assurance and Accreditation (AQ Austria). www.kl.ac.at/en

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