Liberation from renal replacement therapy and early initiation to be supported by the kidney function biomarker Proenkephalin A 119-159 (penKid)

- *PenKid identified as a promising kidney function biomarker to support future precision medicine approaches for RRT-dependent AKI.*
- *A post-hoc analysis of the ELAIN trial indicates that penKid could enable the assessment of kidney function under RRT and guide early and successful liberation of treatment.*
- *For the risk stratification of AKI patients, penKid may be a useful biomarker in identifying the need for timely RRT initiation.*

Hennigsdorf, Germany, December 15, 2022 - The diagnostic company SphingoTec GmbH (SphingoTec) announces first data on the kidney function biomarker penKid as a promising tool in supporting early initiation and liberation from RRT (1). Although RRT remains a pivotal measure in treating AKI complications, it is also associated with significant risks and its duration should be restricted to a minimum. The current findings show that penKid has the potential to reveal unprecedented insights on the underlying kidney function prior and during ongoing RRT, facilitating an early and successful termination of treatment. This may support timely risk stratification and individualization of treatment pathways.

To allow kidney recovery in critically ill patients with AKI, RRT remains the key rescue therapy. However, no precise prediction tools are currently available to determine RRT liberation, although 5 - 13% of AKI patients have a high need for RRT (2,3). Due to scarcely available options, discontinuation of RRT relies on expert-based recommendations or clinical judgment based on controversial indications such as urine output. And yet, early discontinuation of RRT would not only be beneficial for the patient but also support the allocation of limited intensive care resources, thereby helping to reduce costs of unnecessarily long periods of RRT or unsuccessful termination with subsequent need for re-initiation of RRT (4).

The current analysis has demonstrated that penKid could be a competent marker to monitor kidney function during ongoing RRT (1). Low penKid values during RRT were associated with earlier and successful liberation from RRT, compared to the group presenting high penKid levels. As a consequence, penKid could support clinicians identify those patients with sufficient kidney recovery, suitable for RRT liberation. In addition, at the time point of AKI diagnosis, measuring penKid values could allow the identification of patients who may benefit from early RRT initiation. Supplementary data suggest that prompt intervention may result in shorter RRT duration.

The results of this study are complemented by previous scientific evidence showing that penKid mirrors real-time glomerular filtration rate (GFR) even in non-stable settings (5). Furthermore, penKid is unaffected by non-renal factors such as inflammation, common comorbidities, and gender (6,7,8), making it a suitable biomarker, especially for critically ill patients.

Deborah Bergmann, Director of Marketing and Sales at SphingoTec commented, “The implications of the current findings are of great significance for future individualized approaches in managing RRT-dependent AKI. For the first time, scientists identified a biomarker that has the potential to shed light on clinically hidden developments in patients undergoing RRT, a highly challenging stage. This may benefit patients’ health on short and long term, as well as support healthcare providers reduce costs and better assign resources.”

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References:

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About SphingoTec

SphingoTec GmbH ("SphingoTec"; Hennigsdorf near Berlin, Germany) is a commercial-stage diagnostic company focusing on innovative critical care biomarkers for the diagnosis, prediction and monitoring of acute medical conditions. Sphingotec's innovative markers are made available on different IVD platforms. SphingoTec's proprietary biomarker portfolio includes bioactive Adrenomedullin 1-52 (bio-ADM), a biomarker for assessment of endothelial function in conditions like sepsis, and Proenkephalin A 119-159 (penKid), a biomarker for assessment of kidney function in critical diseases.

About penKid

Proenkephalin A 119-159 (penKid) is a blood-based biomarker for assessing the kidney function in acute and critical conditions. The biomarker offers a blood-based alternative for the complex and time-consuming in vivo measurement of true glomerular filtration rate (GFR). PenKid is independent of common comorbidities (e.g. hypertension and diabetes) and the frequently occurring inflammation in critically ill patients. Rising penKid blood levels predict acute kidney injury earlier than today's standard of care and decreasing penKid blood levels indicate the improvement of kidney function. Scientific evidence shows that penKid also reflects kidney function in children, representing a potential biomarker for pediatric AKI.

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