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Integrating system of biosignals during hemodialysis: Continuous mOnitoriNg viTal sIgN dUring hemodialysis (CONTINUAL) registry

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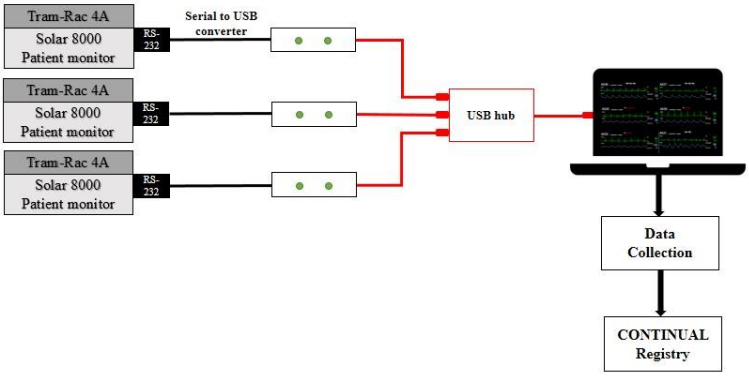
Objectives: Intradialytic complications are associated with cardiovascular risk in patients undergoing hemodialysis. Appropriate monitoring of these complications is essential to prevent worse outcomes. However, systems with continuous monitoring of vital signs during hemodialysis have never been provided. Herein, we proposed an open-source registry using system with monitoring and collecting intradialytic biosignals in the cloud, which named a CONTINUAL (Continuous mOnitoriNg viTal sIgN dUring hemodialysis) registry.

Methods: The registry was based on a real-time multimodal data acquisition during hemodialysis, such as blood pressures, heart rate, electrocardiogram, and photoplethysmogram.

Results: Using this system, we had collected biosignals from 2,243 hemodialysis sessions (612 patients) in dialysis facility from September 2020 to April 2021.

Conclusions: This biosignal registry will help conduct the epidemiological survey on the intradialytic complications, develop the artificial intelligence model predicting the complications, and finally improve patient outcomes.

Figure. Schematic representation of data platform from monitoring to storage.



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