Algorithmic methodology for opportunistic detection and monitoring of chronic kidney disease

DESCRIPTION OF THE TECHNOLOGY

Chronic kidney disease (CKD) is a major health problem. However, only around 50% of patients with diabetes and less than 25% of other risk groups, such as those with high blood pressure or obesity, undergo the recommended screening for early detection. This significant under-identification favours the silent progression of the disease, an increase of the cardiovascular risk, representing a missed clinical opportunity. Early detection would allow intervention in the initial stages, when preventive and therapeutic strategies are most effective, safe, and cost-effective for the healthcare system.

To address this problem, INCLIVA researchers have developed a **methodology based on a decision algorithm integrated into a clinical decision support system** (CDSS). This system connects in real time to various clinical databases (electronic medical records, the laboratory computer system, and test request systems). Consequently, patients at risk of CKD can be screened opportunistically, and those already diagnosed can be monitored in a sentinel manner.

ADVANTAGES

- ✓ Automated early detection of CKD in at-risk patients without altering the patient journey.
- ✓ Full integration with medical record databases.
- ✓ Cost-effective screening, as the only additional burden is low-cost analytical tests.
- ✓ Real-time risk stratification according to national guidelines.
- ✓ Reduction of clinical variability in referrals to nephrology.
- ✓ Streamlining of the patient journey.

- ✓ Capacity for implementation in any hospital with a compatible CDSS.
- ✓ Provision of information to Primary Care on the identification of patients with CKD in whom nephroprotective measures and treatments can be implemented more efficiently and at lower cost.

STATE OF DEVELOPMENT

The technology has been validated in a real hospital environment with more than 130 automatic screenings per day; potential >30,000 per year. Ready for adaptation and implementation in other centres.

APPLICATION

Hospitals with nephrology, internal medicine, and primary care services.
Companies that develop electronic health record systems and AI applied to healthcare.

INTELLECTUAL PROPERTY RIGHTS

Know-how KNH2024_01 registered on May 28, 2024.

COLABORATION SOUGHT

IT companies interested in signing a licensing agreement to commercialize or a co-development agreement for this technology.

CONTACT

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