Validity of Klotho, CYR61 and YKL-40 as ideal predictive biomarkers for acute kidney injury: review study

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ABSTRACT

CONTEXT AND OBJECTIVE: Acute kidney injury (AKI) is still a headache for clinicians and scientists as a possible reason for increased death among intensive care unit (ICU) patients after invasive cardiac surgery. Furthermore, the diagnostic process for AKI using conventional biomarkers is not sufficient to ensure early warning of this condition because of the morbid influence of non-renal factors that definitively delay the time for the prognosis. These imposed limitations have led to significant amounts of research targeted towards identifying novel biomarkers for AKI with a sustained degree of sensitivity and specificity. Here, we reviewed previous studies conducted on the Klotho, CYR61 and YKL-40 biomarkers in relation to AKI.
DESIGN AND SETTING: Review of the literature conducted in the Institute of Clinical Chemistry & Biochemistry, Ljubljana University Medical Center, Slovenia.
METHODS: The literature was searched in PubMed and the Cochrane Library. From the database of this specialty, we selected 17 references that matched our context for detailed analysis and further investigation.
RESULTS: The studies reviewed showed notable differences in their results relating to the diagnostic impact of Klotho, CYR61 and YKL-40 on early prediction of AKI.
CONCLUSIONS: The results regarding the Klotho, CYR61 and YKL-40 biomarkers showed markedly equivocal performance in the previous studies and did not fulfill the expectations that these factors would form valid possible biomarkers for AKI.

KEY WORDS:
Acute kidney injury, Thoracic surgery, Proteins, Biomarkers, Review.