Investigating the rapid diagnostic value of Cardiac Troponin I (cTnI) compared to the EIA method, for detecting early myocardial damage.

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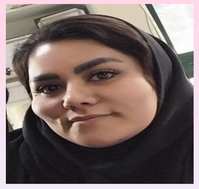

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Introduction

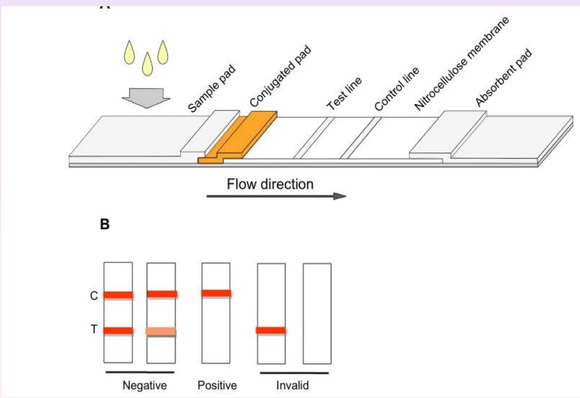
Cardiovascular diseases have a leading role in terms of morbidity, mortality, and disability of the population, causing significant socioeconomic damage to all countries of the world. This circumstance requires researchers to constantly seek for new biomarkers and improve methods for determining existing biomarkers, and search for new therapeutic targets to improve diagnostic and treatment strategies. Recently, there have been some important changes in laboratory diagnostics of patients with acute coronary syndrome, due to the introduction into the routine practice of new high and ultrasensitive methods for the determination of biomarkers of injury, specific to cardiac muscle tissue, namely cardiac troponins.

Aims

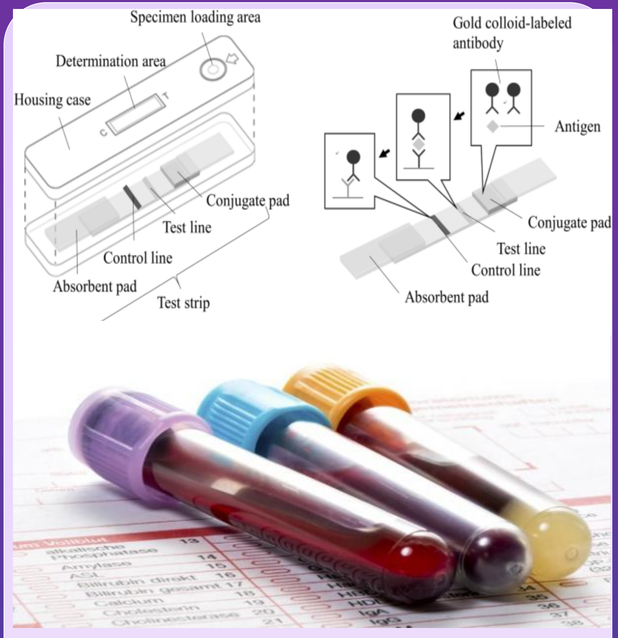
Cardiac troponin I (cTnI) have been shown to be highly sensitive and specific marker of myocardial cell injury. The purpose of this study was to investigate the diagnostic value of cTnI to determine whether they can be used for early diagnosis of myocardial damage.

Methods

One hundred adults with heart attack symptoms referred for EIA provided a whole blood/serum/plasma sample for testing. Patients were considered cTnI positive if EIA tests were positive. whole blood/serum/plasma samples were collected from same patients and were tested for cTnI rapid test. The cTnI one step Troponin I test device is a qualitative, membrane based immunoassay for the detection of cTnI in whole blood/serum/plasma. The membrane is pre-coated whit capture reagent one the test line region of the test.

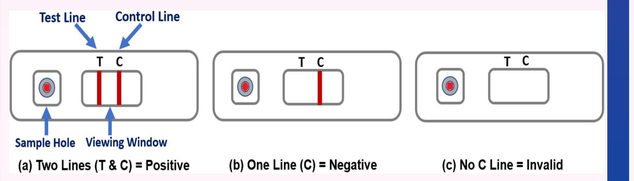


Schematic diagram of the immunochromatographic test strip. •Notes: (A) The preparation and assembly of the immunoassay test strip. (B) Result judgment of the test strip. C, control line; T, test line.



Results

The sensitivities and specificities of the Rojan Azma.. cardiac troponin I (cTnI) kits (rapid immunochromatography method) when compared with EIA diagnosis were, 98.5 %, 98.5%, respectively.



【INTERPRETATION OF RESULTS】

•The cTnI One Step Troponin I Test Device (Whole Blood/Serum/Plasma) is a simple test that utilizes a combination of onti-cTnI antibody coated particles and capture reagent to detect cTnI in whole blood, serum or plasma. The minimum detection level is <u>0.5 ng/mL.</u>

Conclusions

The rapid diagnostic test of cardiac troponin I (cTnI) may be considered as an alternative to EIA testing in the initial diagnosis of patients with heart attack symptoms who do not require Expensive and time-consuming tests. whole blood/serum/plasma testing has the potential advantages of being simple to perform, relatively cheap, and samples can be submitted directly from primary care and performed with least available hardware and trained personal.

Acknowledgment

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