

# IMMUNOCHROMATOGRAPHIC METHODS OF EXPRESS DIAGNOSTICS ON IDENTIFICATION OF CARDIOMARKERS

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**Abstract:** *the diagnosis of a myocardial infarction is made with signs of a necrosis of the myocardium including rise or depression of concentration at least of one cordial biomarker in combination with one of the listed symptoms of ischemia. Therefore, definition of biochemical markers of a necrosis of a myocardium – a necessary component of complex diagnostics of a myocardial infarction. At the same time patients with suspicion on an acute myocardial infarction should carry out simultaneous definition of cardiomarkers. In the existing clinical developments it is specified to determine existence of cardiomarkers by a quick test as in the conditions of rendering emergency medical service time is of great importance.*

**Keywords:** *myocardial infarction, laboratory diagnostics, quick test, immunochromatographic method, cardiomarker.*

## ИММУНОХРОМАТОГРАФИЧЕСКИЕ МЕТОДЫ ЭКСПРЕСС-ДИАГНОСТИКИ ПО ВЫЯВЛЕНИЮ КАРДИОМАРКЕРОВ Юлбарисова Ф.А. (Республика Узбекистан)

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**Аннотация:** *диагноз инфаркта миокарда ставится при наличии признаков некроза миокарда, включающего в себя подъем или снижение концентрации хотя бы одного сердечного биомаркера, в сочетании с одним из перечисленных признаков ишемии. Следовательно, определение биохимических маркеров некроза миокарда – необходимый компонент комплексной диагностики инфаркта миокарда. При этом пациентам с подозрением на острый инфаркт миокарда следует проводить одновременное определение кардиомаккеров. В существующих клинических разработках указано определять наличие кардиомаккеров экспресс-методом, так как в условиях оказания скорой медицинской помощи время имеет большое значение.*

**Ключевые слова:** *инфаркт миокарда, лабораторная диагностика, экспресс-метод, иммунохроматографический метод, кардиомаккер.*

It is known that now the medical science achieved appreciable success in treatment of heart vascular diseases. The existing therapy methods in the majority cases provide restoration of a circulation in cordial vascular system, and, the main thing of course, to save the patient's life. The efficiency of therapeutic methods depends in a decisive way on that, treatment therefore the large role in it is played by well-timed diagnostics how fast will begin [1].

The diagnosis of a myocardial infarction is made with signs of a necrosis of the myocardium including rise or depression of concentration at least of one cordial biomarker in combination with one of the listed symptoms of ischemia. Therefore, definition of biochemical markers of a necrosis of a myocardium – a necessary component of complex diagnostics of a myocardial infarction. At the same time patients with suspicion on an acute myocardial infarction should carry out simultaneous definition of cardiomarkers (troponin, a creatine kinase and миглобин). In the existing clinical developments it is specified to determine existence of cardiomarkers by a quick test since in the conditions of rendering emergency medical service time is of great importance [2].

In laboratory diagnostics by the only method by means of which definition of a troponin, possible creatine kinases and the miglobina a quick test is the immunochromatography allowing to tap markers of diseases within 15 minutes.

The technique of this research consists in carrying out a thin-layer chromatography. The blood in volume of 100 mkl (5-6 drops) is applied through a special reception window on a substrate for a sample. A blood plasma, passing through the filter under the influence of capillary forces, impregnates a strip where the proteins markers which are present at a blood plasma react with monoclonal antibodies, labeled colloid gold, forming complexes an antigen antibody. Further under the influence of capillary forces these complexes move on a chromatographic membrane and react with the immobilized antibodies in the corresponding zones against the same proteins [3].

It is established if target protein marker is present at enough, the painted conjugate bound to protein collects in a zone of an immobilization of antibodies against this protein. The free conjugate moves ahead on a chromatographic membrane and is taken in a control strip the immobilized secondary antibodies. If in zones of capture enough immune complexes collects, then strips thanks to particles of colloid gold get a characteristic claret shade. The

inspection zone is painted always. If in an inspection zone the accurate color strip doesn't appear, then the test result is wrong, and in this case the sample has to be repeatedly tested. At the same time it is necessary to use the new test device. If zones of capture don't contain any bright color strip, and the inspection zone shows such strip, then the test result is negative [4].

Data the test is considered positive if as a result of it in zones of capture of immune complexes within 15 minutes there were color strips which demonstrate excess of concentration of protein marker over threshold level.

Thus, the efficiency of well-timed diagnostics of an infarct is enlarged when with traditional diagnostic methods the quick test of an immunochromatographic analysis of cardiomarkers which can be recommended further for carrying out both in medical institutions, and in urgent medicine is applied. Broad use of immunochromatographic methods of express diagnostics of cardiomarkers will allow to increase considerably efficiency of treatment of myocardial infarctions and to lower a mortality.

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