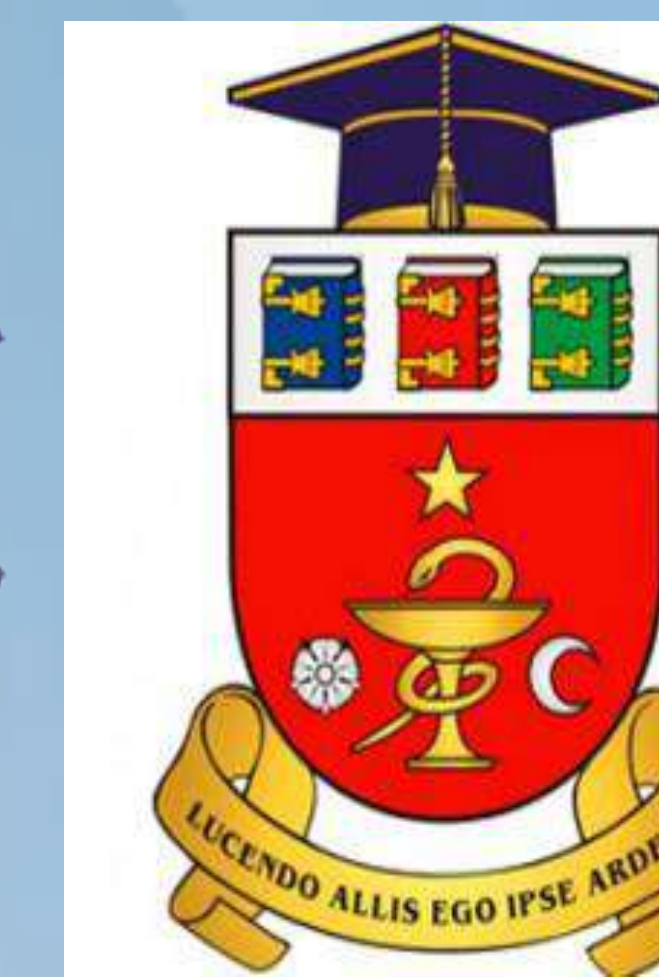


# Integrating telemedicine as a tool for acute coronary syndrome early diagnosis



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## BACKGROUND

Cardiology is a promising field in telemedicine. Cardiovascular disease is one of the leading causes of death with a growing number of hospitalizations and health-care costs. In patients with acute coronary syndrome, the time interval from symptoms onset to reperfusion is a critical determinant. The transmission of electrocardiogram (ECG) from ambulance to a center for analysis is already a routine in the approach of acute coronary syndrome (ACS). Telemedical technologies provide the remote expert support and interpretation of electrocardiography recordings via telephone transmission, helping to predict ACS in patients with chest pain at home. Republic of Moldova is a small country and the health system is distributed geographically. Emergency stations and ambulance teams, first and second level hospitals are scattered through the country, while specialized centers, third level hospitals are mostly located in the capital Chisinau. The decision to admit a patient to a coronary care center for ACS has serious medical and financial consequences.

## THE AIM OF THE STUDY

The aim of this study was to develop a clinical tool for predicting and evaluating the efficacy and impact of telemedicine in the early diagnosis of acute coronary syndrome in patients with chest pain at home.

## MATERIALS AND METHODS

Two groups of respondents were created for the research: L1 included respondents with chest pain and consulted at a distance and L0 included respondents treated according to the national clinical protocol. In the first stage, a computerized protocol was developed to predict acute coronary syndrome. In stage 2 this protocol was applied for the diagnosis of acute coronary syndrome.

## RESULTS

Out of 127 patients 68 (53.6%) were male and 59(46.4%) were female. Acute coronary syndrome(ACS) was diagnosed in 76 of patients, with a prevalence of STEMI-ACS in 32,9% and NON-STEMI-ACS in 67,1%. Wireless transmission and physician interpretation of prehospital ECG and data collected contributed to lower rates of false-positive and false-negative ACS diagnosis and guide selection of the treatment and transportation details. Prehospital ECG transmission systems were also useful for risk stratification and triage for patients with suspected cardiovascular emergency and presenting atypical symptoms. Analysis of collected data showed a higher incidence of acute coronary syndrome in male, but with a higher addressability of female. Evaluation of risk factors showed presence of arterial hypertension, dislipidemia, diabetes mielitus, atrial fibrillation, smoking and obesity.

## CONCLUSION

In addition to providing more extensive health services, the practical application of telemedicine systems substantially reduces health costs, transportation time, the number of subsequent hospitalizations, and increased clinical efficiency through more appropriate management of ACS.

FIG . 1

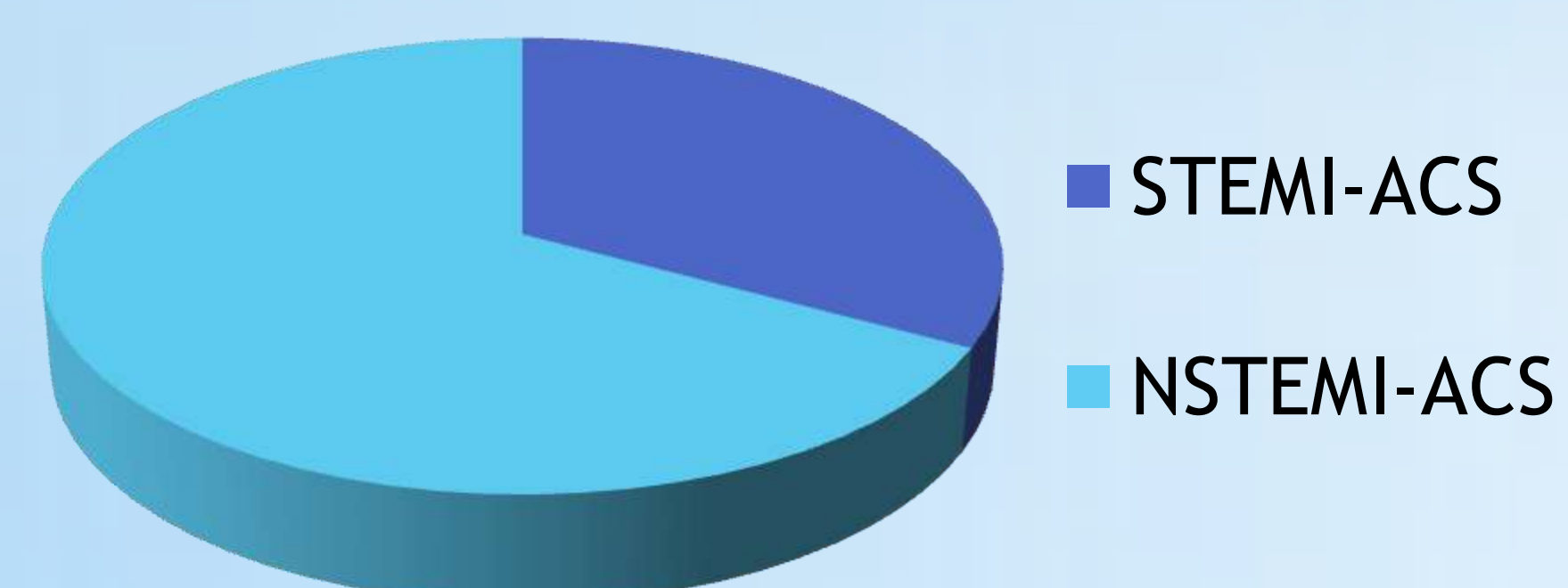


FIG 1 STEMI-ACS AND NSTEMI-ACS PREVALENCE

FIG 2 ACUTE CORONARY SYNDROME INCIDENCE IN MALE AND FEMALE

FIG . 2

