**Clinical Medicine Journal**
Vol. 4, No. 4, 2018, pp. 67-71
http://www.aiscience.org/journal/cmj
ISSN: 2381-7631 (Print); ISSN: 2381-764X (Online)

# Comparison of Basic and Advanced Level Ecg Between Clinics

**Mehmet Serdar Cengizhan[1, *], Isa Ardahanlı[2], Saadet Celik[3]**

[1]Deparment of Internal Medicine, Bilecik State Institute, Bilecik, Turkey
[2]Deparment of Cardiology, Bilecik State Institute, Bilecik, Turkey
[3]Deparment of Medical Biochemistry, Division of Public Health Laboratory, Bilecik, Turkey

## Abstract

Electrocardiography [ECG] comes at the forefront of laboratory methods used to diagnose cardiovascular diseases Non-invasive, short duration, easy to implement and cheap are the most important advantages. ECG is a valuable method for diagnosing rhythm disorders and acute coronary events.. ECG evaluations should be done together with medical history and physical examination findings. Due to the increase in elderly population, patients with heart disease have significantly increased the number of applications for emergency services. The physicians who first examine these diseases are internal medicine specialists, emergency specialists, cardiologists or practitioners in charge of emergency services. Sometimes, making mistakes in vital situations that need to be assessed in a short time can cause undesirable results. The aim of this study is to evaluate the interclinical ECG approach.

## Keywords

Electrocardiography, General Approach, Patient Management

Received: June 26, 2018 / Accepted: July 23, 2018 / Published online: January 16, 2019



## 1. Introduction

The increasingly aging and changing lifestyle of the world's population is associated with morbidity and altered the causes of mortality. At the beginning of the twentieth century, cardiovascular diseases accounted for 10% of the deaths observed in the world. In parallel with the rapid industrialization and socio-economic developments seen in the last century, nowadays cardiovascular diseases have become the primary cause of adult deaths in industrialized societies. Coronary heart disease (CHD) has been the leading cause of deaths in the United States (US) and 40 years of age and later in industrialized western countries. Cardiovascular diseases account for 43.8% of all deaths in the United States and 45% of death cases in Europe [1-7]. Interpretation of electrocardiography [ECG] in emergency services and internal medicine clinics is especially important in the identification of the diagnosis and treatment of patients with chest pain [8]. There are only a few studies evaluating the basic and advanced ECG knowledge of physicians in emergencies and physicians in internal medicine [9, 10]. The aim of this study is to show how the ECG findings of patients with cardiac symptoms presenting to emergency services are managed in different branches.

## 2. Materials and Metods

### 2.1. Study Site

This is a prospective observational comparative hospital based study conducted in Bilecik State hospital, Turkey,

* Corresponding author
E-mail address: meserce@gmail.com (M. S. Cengizhan)

during March 2018 and through June 2018,

### 2.2. Study Population

Patients were evaluated by 2 internal medicine specialist, 2 cardiology specialists, 2 emergency medical specialists and 2 emergency medical practitioners. These were patients with cardiac symptoms who were followed up with ECG findings. 6 patients' ECG information and clinical application symptoms were prepared as a questionnaire for evaluation by physicians. As the questionnaire, we were asked about the preliminary diagnosis and what to do next. Required permissions were obtained before the research. After the explanation of the nature of the research was made and after the approval was given, a questionnaire was applied to the physicians working in the Bilecik state hospital who were admitted to participate in the study.

## 3. Results

When assessed among the participating physicians, a significant difference was observed in terms of basic and advanced ECG questions and approaches (Figure 1), especially in emergency medical practitioners (Table 1). This is especially due to the fact that other branches participate in basic and advanced ECG courses at least once. There was a difference in the question of hyperkalemia related to emergency medicine, internal medicine and cardiology between the physicians who needed specialization (Table 1). In this study; It was found that physicians who received in-service ECG training had a statistically significant difference in ECG interpretation from other physicians ($p < 0.05$). In-service training programs in the institution periodically need to be repeated on various topics, especially since the difference in the level of education of physicians can be reduced with in-service training programs.

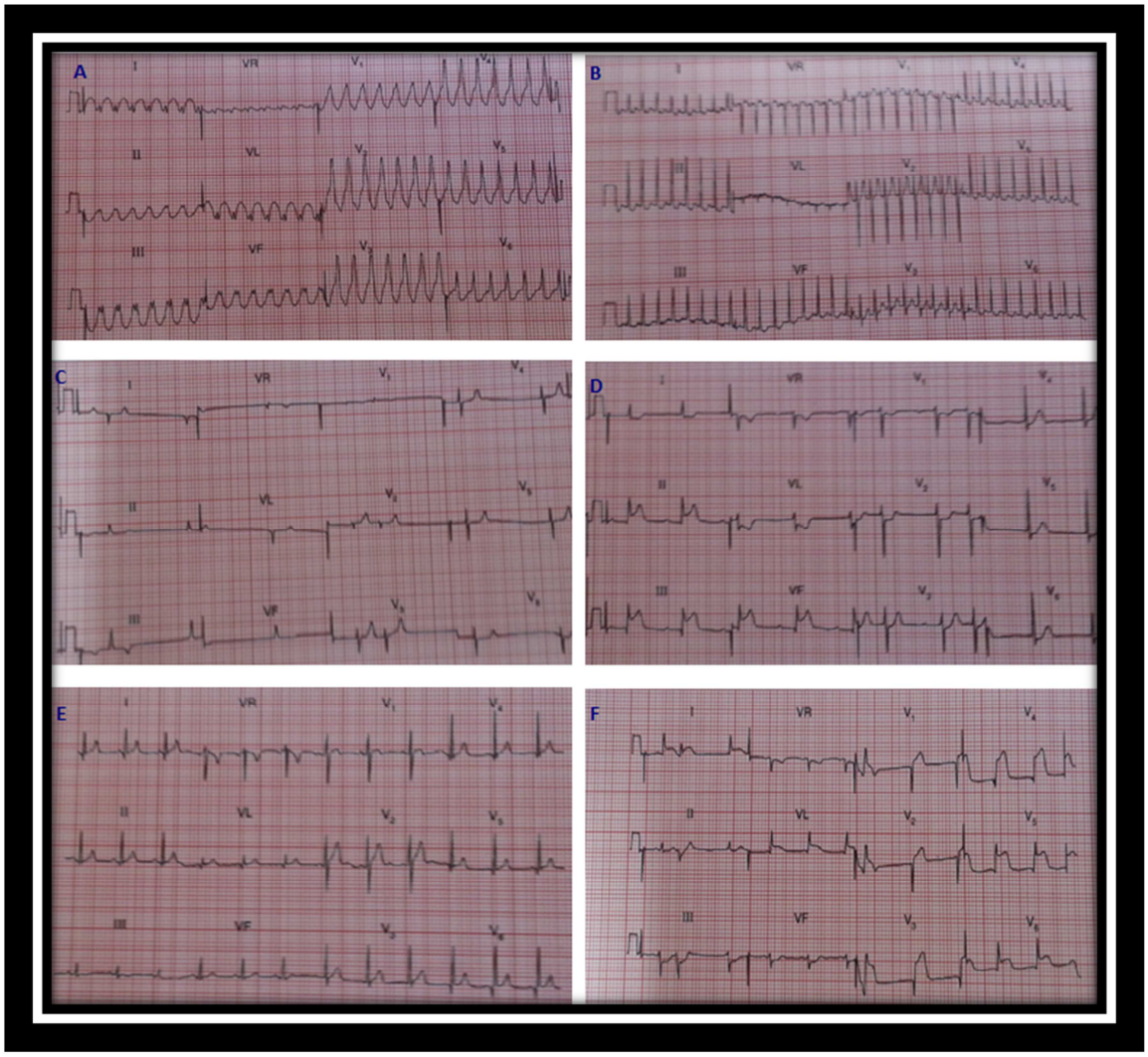


**Figure 1.** A: A male patient who is 60-year-old and have severe chest pain, he's breathless in a few minutes and presenkop, blood pressure is not available in emergency servist pulse: 150/min; B: A woman who is 45-year-old complained of occasional palpitations for 20 years; C: A 65-year-old woman with long-term heart failure diagnosed with rheumatic heart disease is admitted with increased breathlessness and ankle swelling; D: A man who is 55-year-old, presenting to an emergency service with complaints of severe pain in the middle of an hour, blood pressure 100/80 mmHg, pale, cold and sweaty; E: A man who is 30-year-old complaining of chest pain, physical examination was normal; F: A man who is 50-year-old, complaining of severe chest pain for an hour.

**Table 1.** According to ECG and clinical status, Preliminary diagnosis and approach of physicians.

| ECG diagnosis | A: Ventricular tachycardia | B: Supraventricular tachyarrhythmia | C: hyperpotassemia | D: Acute inferior MI+1. Level AV block | E: Normal ECG | F: Anterior MI+VES |
|---|---|---|---|---|---|---|
| 1. physician approach | SVT, recommended Metoprolol | SVT, recommended vagal warning and metoprolol | No answer | Acute coronary syndrome | Normal ECG | Acute coronary syndrome |
| 2. physician approach | VT, recommended Cardioversion | SVT, recommended vagal warning | No answer | Acute coronary syndrome | Normal ECG | Acute coronary syndrome |
| 1. emergency medicine specialist approach | VT, treatment according to hemodynamics. | SVT, vagal warning, adenosine or metoprolol or diltizem | AF, Anticoagulant and betablocker. | Inferior MI, Primer treatment | Normal ECG | Anterior MI, Primer treatment. |
| 2. emergency medicine specialist approach | VT, treatment according to hemodynamics. | SVT, vagal warning, adenosine or metoprolol or diltizem | AV full block, pacemaker. | Inferior MI, Primer treatment | Normal ECG | Anterior MI, Primer treatment. |
| 1. internal medicine specialist approach | VT, treatment according to hemodynamics. | SVT, vagal warning, adenosine or metoprolol or diltizem | AV block, I want to see electrolytes | Inferior MI, Primer treatment | Normal ECG | Anterior MI, Primer treatment. |
| 2. internal medicine specialist approach | VT, treatment according to hemodynamics. | SVT, vagal warning adenosine or metoprolol or diltizem | I want to see electrolytes | Inferior MI, Primer treatment | Normal ECG | Anterior MI, Primer treatment. |
| 1. cardiology specialist approach | VT, treatment according to hemodynamics. | SVT, vagal warning adenosine or metoprolol or diltizem ablation if necessary. | Hyperpotassium-dependent, electrolyte therapy | İnferior MI+ 1. Level AV block, Primer teadavi | Normal ECG | Anterior MI + VES Primer treatment. |
| 2. cardiology specialist approach | VT, treatment according to hemodynamics. | SVT, vagal warning, adenosine or metoprolol or diltizem ablation if necessary | Hyperpotassium-dependent, electrolyte therapy | İnferior MI+ 1. Level AV block, Primer tedavi | Normal ECG | Anterior MI + VES Primer treatment |

## 4. Discussion

The technology and also the clinical worth of the ECG (ECG) have unceasingly evolved since the invention of the string meter by Einthoven in 1901. By 1910, the EKG had emerged from the laboratory into the clinic and shortly became the foremost unremarkably used viscus assay. though different techniques have evolved to assess viscus structure and mechanical operate, the EKG remains the elemental technique to assess the heart's electrical activity. This chapter outlines the factors for and also the utility of the foremost common EKG diagnoses in adults. The clinical uses of the cardiogram (ECG) embrace each [11] the identification and characterization of existing or suspected upset and [12] the prediction of future clinical events associated with internal organ perform, that is, risk stratification. to satisfy these goals with outside potency and effectualness, varied skilled organizations have projected appropriateness tips for recording AN graphical record. These is also thought of for many completely different populations—persons with familiar cardiovascular disease, those with suspected cardiovascular disease or at high risk for cardiovascular disease, and people while not proof of cardiovascular disease. additionally, a lot of specific recommendations are projected for the employment of the graphical record in special teams, as well as surgical patients, persons with dangerous occupations, athletes, and patients taking medications with electrophysiologic effects.

ACC/AHA tips support the employment of graphical records as a part of the baseline analysis of all patients with familiar upset once initiating medical care familiar to supply ECG changes that correlate with therapeutic responses, progression of malady, or adverse effects; for intermittent follow-up evaluations for investigation of recent or changes in signs or symptoms of upset or relevant laboratory findings; and once important intervals (usually one year or longer) within the absence of clinical changes. Follow-up ECGs aren't thought of acceptable for patients with delicate chronic vas conditions that aren't deemed seemingly to progress (e.g., delicate left atrioventricular valve prolapse) and aren't thought of to be acceptable at every visit for patients with stable cardiovascular disease UN agency square measure seen oft (e.g., at intervals four months) while not proof of clinical amendment [11-17].

Electrocardiography is considered to be an important initial examination of the diagnosis of cardiac acute in the clinics. Especially in emergency, correct interpretation of ECG is important for the treatment of obstructive vessels in acute coronary syndromes with rapid intervention In addition, ECG changes lead to further diagnostic tests. In primary level ECG interpretation; know the basic ECG, to distinguish the most common ECG diagnoses and to gain a systematic approach to ECG evaluation. ECG interpretations should be made by taking into account the findings of the anamnesis and physical examination. Today most medical faculty of universities offer basic and advanced ECG courses. Especially the wrong assessment can be seen more frequently among newly graduated general practitioners. In this study, there was a difference in the practice of ECG interpretation and the next step in the practice physicians more different than the other branches. We think that this is due to both the low number of cases seen in terms of occupation and the basic and advanced ECG courses that specialist branches have participated before. Since Eindhoven's EKG has acquired medicine, this easy and cheap method of examination has been gradually improved every day to help diagnose and treat heart diseases has become an important diagnostic method. In order for physicians to provide effective care in the units they serve, they need to use the medical equipment correctly in parallel with the developmental technology, and be best able to benefit from the devices, in addition to having sufficient knowledge and experience. Physicians have enough knowledge about ECG capture and interpretation and monitor monitoring; early diagnosis of risky heart problems, making the right decision about the attempts to the patient, evaluation of the patient and implementation of the treatments. Early and effective intervention in coronary heart disease is known to be life-saving. This situation necessitates that health personnel working outside the cardiology units should also have the necessary knowledge. Move from this point; Our study is planned to determine the level of the ability of the ECG interpretation practitioners working in all units to recognize emergency ECG findings in cardiac diseases and to evaluate appropriate interventions. In our study; It has been determined that the number of ECG interpretation and basic in-house and advanced ECG training in previously seen patients constitute a positive difference on the level of knowledge of physicians.

## 5. Conclusion

As a result, we think that basic and advanced ECG courses should be done in certain periods for physicians working in emergency departments and internal branches especially for the better evaluation of the patients who are applied due to emergency cardiac. As a result; In this regard, both internal and external institutions effective and practical ECG courses and in-service training programs legislation on what the nurse should do in regulated emergency Frames should be determined. Determination and effective application of clinical protocols will help to provide more qualified and more successful health services.

## Conflict of Interest

The authors declare that they do not have any conflict of interest.

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