

## Abstract

**Background:** The Cardiovascular diseases (CVDs) are the most common diseases that can cause death worldwide. Cardiovascular medications can change ECG parameters, so ECG is a popular vital signal sensing and health monitoring technique that is widely used to identify cardiovascular disorders and track their progression.

**Objective:** The main purpose of this study is to investigate the influence of cardiovascular medications on ECG parameters. **Method:** A cross-sectional study was conducted in December 2024 to March 2025 at cardiac center at Alhawari and Benghazi medical center for patients have any cardiovascular disease and use any types of drugs for cardiovascular diseases all the previous information was write in pre-design questionnaire. **Result:** In total, 144 patients were enrolled in this study. Their mean age was 64.4 years, and (77/144) were male, hypertension was commonly observed cardiovascular disease. The most commonly prescribed drugs beta blockers (bisoprolol) and antiplatelet drugs (aspirin and clopidogril) , the majority of side effect within the patients was palpitation, the significant effect of drugs was with atenolol ,spironolactone, valsartan, vasteral and nitroglycerin all this drugs observed impact on QRS complex( $p < 0.005$ ), and PR changed showed with nabivolol, enalapril, diltiazema, vasteral, ticagrelor, and enoxaparin the( P-value was less than or equal to 0.005), while ST segment was influence by (micards-plus, fraxibarin and rosuvastatin ( $p < 0.005$ ), however atorvastatin ,diltiazema and captopril effect on T wave inversion( $p=0.047$ , 0.034 and 0.034 respectively), also captopril showed significant effect on QT interval( $p=0.014$ ), and finally impact of heparin on RR interval( $p=0.005$ ), and other drugs not significant impact on ECG changes ( $P>0.05$ ).

**Conclusion:** Beta blockers most common prescribed drugs in Benghazi/Libya, and hypertension was widespread disease , main comorbidity found within the patient was diabetes mellitus, also detected many drugs it has an effect on ECG parameters.

**Key words:** Antiarrhythmic drugs, Beta-blockers, Cardiovascular disease, Cardiovascular medications, CVS, ECG, Electrocardiogram.