

## **ROLE OF TELEMEDICINE NETWORK PROVIDED BY PHARMACIES TO DETECT ELECTROCARDIOGRAPHIC CHANGES DESERVING CARDIOLOGICAL EVALUATION IN YOUNG PATIENTS**

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**BACKGROUND:** cardiac arrhythmias affecting adolescents and young subjects are a wide-ranging problem. Often such conditions, in addition to being highly varied and sometimes hard to diagnose, are largely silent and onset variably and suddenly, sometimes resulting in sudden cardiac death. Such individuals, being asymptomatics, usually do not undergo cardiological evaluation, as their condition may be misrecognized or not suspected until it manifests clinically. Thus, there is a need to develop cheap and easily accessible screening systems for patients that allow early identification of electrocardiographic (EKG) findings deserving evaluation by the cardiologist. Recently, pharmacies have proposed EKG screening programs for cardiac arrhythmias using a telematics network, enabling referral to the cardiology specialist and identification of patients worthy of further diagnostic investigations.

**AIM OF THE STUDY:** to assess validity, feasibility and usefulness of an electrocardiographic screening program for the prevention of cardiac sudden death in subjects < 18 years old with the support of a telemedicine service available in local pharmacies.

**MATERIALS AND METHOD:** we analyzed 12-lead electrocardiograms (ECGs) recorded by 4,500 country pharmacies in subjects with < 18 years old, evaluated and stored in one telemedicine platform provided by Health Telematic Network (HTN), in cooperation with the Cardiology Department of Spedali Civili Hospital and University of Brescia.

**RESULTS:** from April 2010 to January 2023, 266.381 subjects with < 18 years old underwent electrocardiographic examination in territorial pharmacies. Of them, 142.924 (53.65%) were men. In 440 subjects (0.16%) a first or a second-degree atrio-ventricular block were found. Moreover, in 94 (0.03%) of them a delta-wave in QRS complex was found, suggesting the presence of a Wolff-Parkinson-White syndrome. In 59 (0.022%), a ST segment with Brugada-like pattern was identified, whereas in 118 (0.04%) a long QT was detected. All subjects in which an electrocardiographic alteration was found were referred to outpatient cardiological visit for further diagnostic evaluations.

**CONCLUSION:** These data suggest the potential validity, feasibility and usefulness of an electrocardiographic screening program for the prevention of cardiac sudden death in subjects < 18 years old performed in territorial pharmacies. This could be a valuable strategy to noninvasively and easily identify those subjects who need further diagnostic investigations and to rule out conditions that, especially in a young and otherwise healthy population, could manifest dramatically and suddenly, often without the possibility of intervention.