

Pilot Study for Pre-existing Conditions in Pre-participation Physical Exams in Collegiate Athletes

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ABSTRACT

Background and Purpose: Disagreement exists in the sports medicine field concerning the best way to recognize and prevent unexpected deaths in sports. The purpose of this pilot study was to determine the extent to which suspect cardiac conditions were present during pre-participation physical exams (PPE) in collegiate athletes. **Methods:** Twenty-seven ($N = 27$) Division II athletes ages 18 to 24 were screened for ECG abnormalities during routine PPE. All subjects were required to go through a detailed medical and health history as a requirement of participation in NCAA athletic activity. This included a 29 item sign, symptom, and injury history list; vision screening; dental exam; and a general medical and musculoskeletal exam. Height, weight, supine 12-lead ECG (HP, QRS Card Suite® and Welch Allyn, CardioPerfect®) and supine blood pressures were measured using a standard sphygmomanometer and stethoscope. Each subject rested in a supine position for two minutes after which a blood pressure and average resting 12-lead ECG was recorded. Results are reported as means \pm SD. **Results:** Of the 27 athletes tested, 16 participated in football, 4 basketball, 3 cheerleading, 2 track and field, 1 golf, and 1 softball. Two male football athletes had diastolic blood pressures equal to 90 mmHg. One male football athlete (168 kg) had a borderline ECG marked by RSR' pattern in V1, Lead III, and avF. His resting BP was 128/84 mmHg. This athlete also had a family history of hypertrophic cardiomyopathy. Three other athletes (golf, football) reported family history of cardiac problems or hypertension. All of the athletes had normal resting blood pressures and heart rates. One athlete (cheer) reported a history of heart palpitations (flutter). No other abnormalities were found in the physical or medical screenings for this group of athletes. **Conclusion:** The goal for the future is to continue to use perform thorough medical and health history screening tools in the PPE. Similarly, we will be following this pilot group in the future to identify and match medical and health histories with future events.