



COMPARATIVE STUDY OF RESTING ELECTROCARDIOGRAPHIC ASPECTS BETWEEN YOUNG TOP ATHLETES AND SEDENTARY SENEGALESE



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INTRODUCTION:

Intensive and prolonged practice of sport can induce cardiovascular and electrocardiographic changes. Some electrocardiographic tracings in trained athletes may exhibit peculiarities that may mimic heart disease such as hypertrophic cardiomyopathy or arrhythmogenic right ventricular cardiomyopathy. Scientific data available in the literature also shows that black athletes are the most vulnerable to sudden cardiac death associated with exercise and tend to exhibit a broader spectrum of ECG abnormalities compared to athletes of other races. The aim of our study was to compare the electrocardiographic signs of rest between athletes and sedentary people.

MATERIAL AND METHODS:

A descriptive and comparative cross-sectional study was carried out from July to October 2019 involving 50 sedentary and 150 high-level athletes, 50 basketball players, 50 footballers and 50 karatekas. They were all male. They had at least ten hours of training per week for over a year regardless of the type of sport involved. All subjects underwent careful clinical examination and resting electrocardiographic recording.

RESULTS:

Anthropométric data	Athletes		Sedentary subjects	
	Mean	Min – Max	Mean	Min –Max
Age (years)	20.58 ± 3.85	15 – 30	22.38 ± 3.76	17 – 30
Weight (kg)	68.71 ± 10.11	49 – 95	67.17 ± 9.49	46 – 99.
Height (cm)	182.34 ± 8.83	158 – 202	178.52±8.26	162 – 195
BMI (kg/m ²)	20.62 ± 2.36	16 – 31	21.14 ± 3.23	16 – 31

Table 1 : anthropométric data of our population.

Parameters	Athletes		Sedentary subjects	
	n	%	n	%
Bradycardia	57	38	9	18
Tachycardia	0	0	2	4
Sinus rhythm	147	98	49	98
Coronary sinus rhythm	1	0.67	1	2
Wolf Parkinson White	1	0.67	0	0
Wandering pacemaker	1	0.67	0	0

Table 2 : heart rate and rhythm of our athletes and sedentary subjects.

Parameters	Athletes	Sedentary subjects
QRS duration V1 (ms)	99	97
QRS duration V5 (ms)	80	60
Sokolow-Lyon (mm)	29	25
First-degree AV block	6	4
LVH	28	0
RVH	4	0
Incomplete RBBB	13	3
Complete RBBB	1	0
Ventricular extrasystole	2	0

Table 3 : auriculoventricular and intraventricular conduction defects

Parameters	Athletes		Sedentary subjects	
	n	%	n	%
ST-segment elevation	46	31	1	2
Early repolarization	6	4	0	0

Table 4 : distribution of ST-segment data

DISCUSSION/CONCLUSION:

The practice of high-level sport in Senegalese athletes induces electrocardiographic changes linked to the physiological adaptations of the heart to distinguish electrical changes of a pathological nature. It is fundamental to identify and understand changes in the ECG that may indicate the presence of an underlying pathological heart disorder.