# INTRODUCTION

Patients with central nervous system disorders often have abnormal electrocardiograms in the absence of known organic heart disease (Yamour et al., 1980).

The presence of S-T and T wave changes in the ECG suggesting myocardial ischemia and injury led to the erroneous diagnosis of acute myocardial infarction in a patient with spontaneous subarachnoid haemorrhage and no heart disease (Beard et al., 1959).

Abnormal E.C.G. changes may occur in patients with cerebral atherosclerosis and cerebral infarction and in patients with cerebral and subarachnoid haemorrhage and reflects the cardiac changes in these patients (Nitzberg, 1954). These changes consist mainly of "ST" segment depression, flat or, inverted T wave, marked prolongation of Q-T interval, prominent U wave in leads which reflect a left ventricular epicardial complex; bradycardia frequently accompanied these changes (Hennery, 1972). Pattern of left ventricular hypertrophy commonly appears and is due to long-standing myocardial ischemia (Beirchell, 1961).

Nitzberg (1954) demonstrated ischemic pattern and

left ventricular hypertrophy pattern among patients with cerebral infarcts. Beirchell (1961) also studied the relation between E.C.G. changes and cerebral infarcts and found that ventricular premature beats are of frequent occurrence.

Lown in 1954) studied 60 cases of cerebrovascular accidents and he found sinus bradycardia, "ST" segment depression with inversion of "T" wave, prolongation of "QT" interval and prominent "U" wave.

The aim of this work is to describe and evaluate the changes of the ECG associated with primarily non-cardiac condition which is hemiplegia whether of recent onset or, old cases with the specific goal of finding specific pattern(s) that can help in their diagnosis and comparing our results with the results of other authors in this subject.

The thesis will begin with description of the normal electrophysiology of the heart which forms the basis for understanding the various changes in the normal E.C.G. then the different mechanisms underlying atherosclerosis will be mentioned with due stress on the extent of atherosclerosis as a generalized process affecting the arterial trees anywhere in the body

including the coronary and cerebral circulation vessels. Other risk factors relating dangerous events in the cerebral and coronary circulations will be mentioned. Finally the E.C.G. changes that have been reported in various intracranial events and cerebral diseases causing hemiplegia will be reviewed.