Summary

The most important and consistent sources of blood pressure variation and the diurnal changes are associated with the sleeping-waking cycle. For these reasons, the blood pressure in any individual subject is not easily determined by clinic blood pressure measurements which can be also called snap-shot blood pressure measurements.

Technical progress in measuring 24-h ambulatory blood pressure, has now permitted the measurement of several components of day and night blood pressure variability.

It has been known for many years that blood pressure decreases during the night, usually by 10% to 20 %. People could be classified as " dippers " or " non-dippers " according to the degree to which their blood pressure falls during sleep. While the majority of people would be classified as dippers (usually defined as a nocturnal decrease of 10 % or more), there are a variety of clinical situations associated with a diminished nocturnal fall of blood pressure. Non-dipping maybe seen in healthy normotensive individuals, but is more commonly seen in hypertensives.

Several cross-sectional studies have shown that target organ damage maybe more pronounced in non-dippers than in dippers.

Ambulatory blood pressure monitoring is an important technique for studying normal and disturbed mechanisms controlling circulation in daily life.

Episodes of myocardial isch emia, either symptomatic or silent, have been detected by ambulatory electrocardiographic (ECG) monitoring in normotensive patients with CAD, as well as in hypertensive patients with

or without clinical evidence of stable CAD, various studies have reported that ambulatory ischaemia is associated with an adverse prognosis in patients with stable CAD.

Two groups of patients from Police Authority Hospital, Al Agouza-Giza-Egypt were studied, the first (group I) comprised of sixty-five male patients suffering from coronary artery disease (CAD) diagnosed by coronary angiography, non-diabetic or uraemic.

The second (group II) were twenty-five hypertensive subjects who had typical chest pain and had no signs or symptoms of cardiovascular or metabolic diseases as assessed by medical history, physical examination and laboratory investigations and had normal coronary angiographic findings, all the patients of both group are under anti hypertensive drugs.

The two groups were males their age ranged from 35-73 years.

Every patient was subjected to full history taking, including age, smoking habit and family history.

Office blood pressure (BP) measurements, Ambulatory blood pressure monitoring was performed with a non-invasive recorder (Oxford Medilog ABP) on a day of typical activity.

Ambulatory BP readings were obtained at one hour intervals through the whole 24 hours monitoring.

Average day-time (awake period), average night-time (asleep period, defined as the period from falling asleep to awakening and not as time in bed), and average 24 hour systolic and diastolic BP were evaluated.

Patients were arbitrarily defined as dippers when nighttime systolic and diastolic BP fall was > 10% and as non-dippers when nighttime BP fall was < 10%.

Biochemical Analyses: Blood samples for total serum cholesterol, triglycerides, glucose, urea and creatinine were drawn and determined by standard methods. The patient who discovered diabetic or ureamic are excluded from the study.

Coronary angiography: Selective coronary arteriography was performed in multiple projections using the judkins technique.

Significant stenosis was considered present when there was $\geq 70\%$ diameter narrowing of a major coronary vessel or $\geq 50\%$ narrowing of the left main stem. Pressures of left ventricle and aorta were recorded.

The present data show that of the 65 CAD patients, 43 patients are non-dippers (66.15 %) i.e. had blood pressure fall <10 % or 10/5 mmHg between day-time and night-time readings, while, 22 patients are dippers (33.8 %) i.e. had blood pressure fall >10 % or 10/5 mmHg between the same time periods.

In the control group, 8 out of 25 subjects are non-dippers (32 %).

Our results show a significant increase of incidence of non-dipping phenomenon among CAD patients (66.15 %) than in control group (32%).

Our results in coronary angiographic findings in non-dippers show one vessel affection in 6 cases (13.9 %), 2 vessels affection in 10 cases (23.2 %), and multi-vessels affection in 27 cases (62.7%) thus, denoting a relatively higher incidence of multi-vessels affection.

The coronary angiographic findings in dippers show one vessel affection in 9 cases (40.9 %), 2 vessels affection in 6 cases (27.2) and multi vessels affection in 7 cases (31.70%) thus, denoting a higher incidence of single vessel affection, this might be a conceivable result due to the relatively small number of dipper cases studied.

In the present study, laboratory findings as regards total cholesterol, triglycerides in the CAD patients group showing a non significant difference between dippers and non-dippers.

Our results show that 13 patients out of 22 among dippers (59%) and 30 out of 43 among non-dippers are smokers (69.7 %).

Ambulatory blood pressure (ABP) monitoring has now become an established clinical tool. One of the most specific characteristics of ABP monitoring is the possibility of being able to discover modification or alteration of the 24 hour cycle of blood pressure.

- **Blood pressure values in dipper and non-dipper groups in CAD patients showed:**

- No difference between systolic day-time BP value in non-dippers and dippers while showing a significant increase on systolic night-time BP value in non-dippers than in dippers among CAD patients (P>0.05).

- No significant difference in diastolic day-time BP value in non-dippers than in dippers among CAD patients (P>0.05), while showing significants difference between diastolic night-time BP value in non-dippers and in dippers among CAD patients (P > 0.05).

- There is no significant difference between day-time heart rate among dippers (median:96 beats/min) and non-dippers (median:93 beats/min) and similarly there is no difference between night-time heart rate among dippers (median:73 beats/min) and non-dippers (median : 68 beats/min).

Our results show a significant increase in the incidence of non-dipping phenomenon among CAD patients (66.15%) than in control group (32%) and shows a elatively higher incidence of multi vessel affection in non-dippers, while a higher incidence of single vessel affection in dippers, this might be a conceivable result due to the relatively small number of cases studied.

Smoking habit did not differ significantly between both the dippers (59%) and the non-dippers (69%).

Palu in 1991 reported that 24 hour ABP monitoring is much more important as a technique for pathophysiological studies and for the control of antihypertensive therapy than as a real tool for diagnosis and prognosis.

Pierdomenico et al. In 1998 stated that ABP monitoring could be helpful and should be recommended in hypertensive patients with CAD before treatment assignment.

Verdecchia in 2000 indicated that the assessment of day-night BP changes detected with non invasive ABP monitoring is important in hypertensive subjects because it allows an improvement in cardiovascular risk stratification above office BP and other traditional risk markers. Obviously, 24 hour ABP monitoring is the only practical way to assess the day-night rhythm of blood pressure.

From this study, it could be concluded that non-dipping phenomenon can be considered as a risk factor for CAD.