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Editorial Comment

Blood Pressure in Hypertension

Lawrence H. Warbasse, Jr., MD*

Among diseases, only essential hypertension presents a unique physical sign, the arterial blood pressure, which defines the illness during its early and most treatable stages;¹⁻⁶ measures the results of treatment; and indicates the prognosis. Since knowing the magnitude of arterial blood pressure is so important, its determination calls for the greatest precision in measurement. Unfortunately the blood pressure is often altered by such things as muscular exertion, coitus, fever, pain, a full bladder, fear, anxiety, cold, rage, smoking, coughing and a host of other factors. To decrease these variables, Addis in 1922 devised a technique which he named basal blood pressure and which has been used, with minor variations, by a number of physicians since then.⁷⁻⁹

On the preceding pages, Dr. John Caldwell introduces us to such a technique, which he terms near basal blood pressure.¹⁰ Its great advantage is that it is a simple technique readily learned by allied health personnel. It is relatively inexpensive and it does not use such scarce resources as a hospital bed, which true basal blood pressure requires. The similarity in Dr. Caldwell's studies of the near basal blood pressure to the 7 a.m. and 7

p.m. home blood pressure is striking. The meaning is less clear. A glance at the great variability of 5-minute plots from 24-hour continuous blood pressure recordings^{1,6} suggests that 7 a.m. and 7 p.m. blood pressures are neither representative of the home blood pressures nor of the work blood pressures. Perhaps at 7 a.m. and 7 p.m. these patients achieved a degree of relaxation comparable to that reached during their near basal blood pressure determinations. A clinical use of basal blood pressure is to compare it to casual blood pressure in a particular patient as a means of explaining to him how the turmoil of life affects his blood pressure.¹¹ The major contribution of Dr. Caldwell's data, however, is its statistical validity. He defines the conditions of measurement and takes the lowest of seven readings rather than one, as in casual blood pressure. The only significant disadvantage is that the technique does take half an hour of the patient's time in the clinic. Since home blood pressures as measured in Dr. Caldwell's patients are nearly the same as the near basal blood pressures, some patients might prefer the home method as an alternative.

For this technique to be widely adapted, however, certain questions must be answered: Is it more reliable than casual blood pressure for defining the population at risk of developing hypertensive cardio-vascular disease? Is it more accurate than casual blood pressure for assessing the course of the dis-

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ease and the response to therapy? Does it predict complications or mortality better than casual blood pressure? We are happy to report that Dr. Caldwell is already at work seeking answers to some of these questions.¹²

Until Dr. Caldwell's studies concerning near basal pressures are completed, many physicians will probably continue to utilize casual blood pressure. At present the best statistics available concerning hypertension relate level of casual blood pressure to the risk of death, cardiovascular complications, or response to therapy. In its classic Build and Blood Pressure Study, the Society of Actuaries used predominantly single casual blood pressures to define the risk of death for all age groups in both sexes.³ This analysis was based on nearly 3,900,000 policy holders followed over a period averaging 7.2 years and up to 18 years, and it included 102,000 deaths. Although the lower limit of what physicians accept as hypertension is still somewhat controversial, it is probably fair to say that very slight increases of either systolic or diastolic blood pressure well below the level once thought abnormal are associated with significant increases in mortality. The Chairman of the Mortality Committee of the Society of Actuaries recently reiterated that casual blood pres-

ures optimal for longevity are those below 110 mm Hg systolic and 70 mm Hg diastolic.¹³ The Framingham long term prospective study of 5,209 men and women has repeatedly affirmed the predictive value of casual blood pressure in its voluminous publications over many years. "Asymptomatic casual hypertension, labile or fixed, systolic or diastolic, at any age, in either sex" was associated with an increased incidence of stroke, heart failure and coronary heart disease.¹⁴⁻¹⁷ Sokolow's elegant study¹⁸ demonstrated a very good correlation between complications of hypertensive cardiovascular disease and the average casual systolic and diastolic blood pressure. The correlation was even better with the mean systolic and diastolic blood pressure measured over three days by a portable recorder. Lastly, Freis' impressive studies describing the reduction of morbidity and mortality in treated hypertensive patients found both related to average casual blood pressure level.¹⁹

In measuring casual blood pressure, if the clinician will standardize the circumstances and take the average of several readings, he may achieve more meaningful data. Perhaps one of the enduring benefits of Dr. Caldwell's study will be to teach us to be less casual with the determination of casual blood pressure.

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Blood Pressure in Hypertension

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Titles and Selected Abstracts

Edited by G. B. Bluhm, MD

Cardiac lymphangioma and lipoma. D. T. Anbe and G. Fine. *Amer Heart J* **86**:227-35, Aug 1973.

The simultaneous occurrence of two cardiac tumors is rare. It is also unusual for benign tumors to be associated with arrhythmias. A case is reported of a 43-year-old Caucasian male who died while undergoing coronary arteriography. This patient, who had normal coronary arteriograms, had various arrhythmias, paroxysmal atrial and junctional tachycardia, sinus tachycardia, wandering pacemaker, frequent premature atrial contractions (atrial trigeminy), premature ventricular contractions and first degree A-V block. The postmortem examination revealed a thick

fibrous epicardium containing lymphangiomatous changes. There was also diffuse and focal (lipoma) lipomatous infiltration of the heart. The lipoma was in the right atrial wall. There was extensive diffuse fatty infiltration in the right atrium, sino-atrial node, inter-atrial septum and atrio-ventricular node. The fatty infiltration was moderate in the right ventricle and minimal in the left atrium. It is felt that there is a causal relationship between the arrhythmias and the lymphangiomatous and lipomatous infiltrations.