Benefits Of Blood Pressure Monitoring

It is becoming increasingly apparent among healthcare professionals and researchers in the field of hypertension, that the traditional practice of relying on arbitrary blood pressure measurements obtained in the clinic or a doctor's office setting, is not representative of one’s true pressure within the arteries and is not a reliable predictor of the risk of damage to the blood vessels and related organs, known as target organ damage, caused by the elevated pressure. This is partly due to the fact that the traditional approach has been to perform arbitrary reading once per month or even once every 3 months in a doctor's office or clinic, which is too small a number of readings to be representative of one's arterial pressure on a whole.

There are also many factors that can affect one's arterial pressure reading in a doctor’s office that are not operative outside of the doctor’s office. One illustration of this is the white-coat hypertension, a phenomenon in which a patient’s pressure is high in the doctor’s office but not elevated when measured outside of the doctor’s office, particularly at home. Conversely, there is another group of patients, usually younger patients, who tend have normal readings in the doctor’s office but elevated readings outside of the doctor's office. This is known as masked hypertension. It is estimated that 12 million people exhibit white coat hypertension and 20 million people have masked hypertension. This is important because, although doctors generally follow patients that have white coat hypertension, they don't usually treat the condition since arterial pressure is normal outside the office. On the other hand people with masked hypertension normally would not be treated because of normal readings in the doctor’s office, but obviously need to be treated since their arterial pressure is elevated outside of the doctor’s office which is where they spend most of their time.Ambulatory blood pressure monitoring with a machine which is worn on the arm and connected to a box worn on the belt that records reading every 15-30 minutes for the 24 hour period is considered to be most representative of one’s true arterial pressure and risk for vessel and related organ damage, but because of the expense of these machines measuring readings several times per day with wrist and cuff machines is an acceptable alternative. Although many of the monitoring-machine manufactures recommend performing readings at the same time each day and waiting at least five minutes in between readings if multiple readings are taking, experts in the field of hypertension recommend performing three readings in rapid succession in the morning and three readings in rapid succession at night and don't necessarily restrict the timing of the readings. The multiplicity of readings allows calculation of an average reading and recognition of significant variability of readings in some individuals. Variation in the timing of readings allows one to determine the effect that variable such as exercise, watching television, or consuming caffeine or alcohol has on readings.

In addition to increasing the diagnosis of hypertension, the data obtained from home monitoring can better enable doctors and other healthcare professionals make more rational and appropriate treatment decisions to improve blood pressure control. For example, if a patient is taking anti-hypertensive medication once daily at 8:00 AM but readings are consistently higher than target between 6:00 AM and 8:00 PM but normal at other times and perhaps somewhat low at night, it might be indicative of the fact that most of the medication has cleared the body two to three hours prior to the next scheduled dose, in which case the doctor might decide that night-time dosing or twice daily dosing is more appropriate.

For healthcare professionals to make optimal use of one's home monitoring endeavors the data must be presented to them in an organized and interpretable format. Although charts with hand-written data indicating the date, time and readings are generally acceptable, an ideal format would be have the charted information printed out from computer-generated entries with graphs generated based on the charted data. This is all performed by the ambulatory blood pressure monitors, but again, they are fairly expensive (ranging from $500.00 - $2,000.00). A very workable alternative however, is to use a desktop-based or Internet-based blood pressure tracker program which allows the manual input of data from the home monitor. The blood pressure tracker program saves the charted data and generates a time graph which can be presented to one's doctor at the time of an office visit or transmitted via the Internet prior to a visit. Microsoft provides a free Internet-based program known as Microsoft Healthvault Beta at the time of the writing of this article. Another free program which I highly recommend is a desktop application, Blood Pressure Tracker by SoundTells - Software for Health. In addition performing all of the aforementioned functions, it affords greater privacy because it is not Internet-based.

In summary, home blood pressure monitoring is more representative of one's true arterial pressure because several readings at different times of the day can be taken. Because of the multiplicity of readings, home monitoring is a better predictor of risk of target organ damage caused by elevated pressure. The frequency of readings also allows healthcare professionals to observe trends and variables which affect one's blood pressure and thus make better and informed treatment decisions to improve control. Better control in principle should reduce the frequency of doctor's visits and target organ damage, both of which should curtail medical expenses.