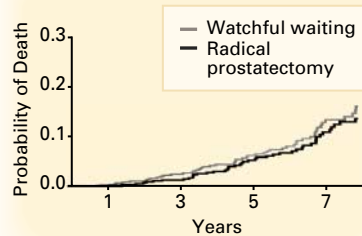




This Week in the Journal

September 12, 2002



Radical Prostatectomy versus Watchful Waiting for Early Prostate Cancer

A total of 695 men with early prostate cancer were randomly assigned to radical prostatectomy or watchful waiting. After a median follow-up of more than six years, more deaths due to prostate cancer had occurred in the watchful-waiting group, but overall survival in the two groups was essentially the same.

This randomized trial offers physicians information that should be valuable to patients with newly diagnosed prostate cancer. The accompanying paper by Steineck et al. provides complementary data on the quality of life in the two groups of men enrolled in this study.

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“These alternatives are associated with complex and incommensurable outcomes, and each man must judge for himself which treatment is preferable.”

Quality of Life after Radical Prostatectomy or Watchful Waiting

In this companion to the report by Holmberg et al. on survival in a randomized comparison of radical prostatectomy with watchful waiting among men with localized prostate cancer, sexual dysfunction and urinary leakage were more common in the radical-prostatectomy group, but the subjective quality of life in the two groups was similar.

This study underscores the uncertainties men with prostate cancer face in choosing between radical prostatectomy and watchful waiting. The differences might have been less ambiguous if all patients in the radical-prostatectomy group had undergone surgery in which preservation of the erectile nerves was routine. Nevertheless, the authors point out that “erectile function is not the only determinant of an active sex life.”

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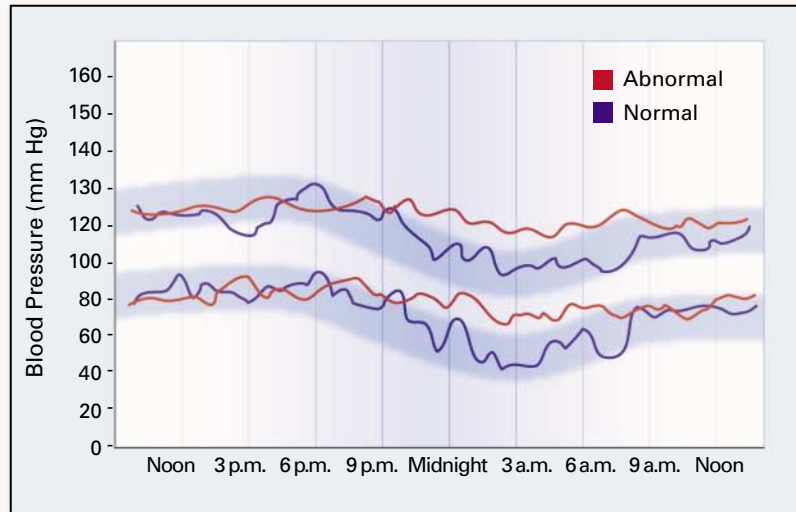
PERSPECTIVE

Ambulatory Blood-Pressure Monitoring as a Predictive Tool

Although some patients with type 1 diabetes mellitus have complications, such as diabetic nephropathy, many do not. Thus, a simple, noninvasive method of identifying those at highest — and lowest — risk for the development of complications would be invaluable.

Certain markers, such as microalbuminuria, which indicates the presence of very early renal disease, offer some promise. Yet if microalbuminuria is present, there is already substantial renal injury, which may prove difficult or impossible to reverse. The level of glycosylated hemoglobin is directly related to the risk of microalbuminuria, as well as other diabetic complications. Maintaining glycosylated hemoglobin at a target level is certainly an important goal, but it is often hard to achieve. It is also difficult to control hypertension, which is another established risk factor for the development of diabetic nephropathy. However, by the time a patient with diabetes has frankly high blood pressure, there is already likely to be renal damage. Can earlier detection of changes in blood pressure predict the risk of declining renal function?

On the basis of other studies of risk factors for cardiovascular and renal diseases, a likely marker would be an alteration in the normal circadian pattern of blood pressure. Blood pressure is lowest in the early morning, rises as the day progresses, then dips down during the night and earliest hours of the morning (see Figure). Both cross-sectional and prospective data sug-



Normal and Abnormal Circadian Patterns of Blood Pressure.

The normal pattern is characterized by a drop in blood pressure during the night and early morning, and the abnormal pattern by the absence of a nocturnal drop in pressure.

gest that an altered circadian pattern of blood pressure is tied to the presence of various renal diseases and to left ventricular hypertrophy, as well as to markers of early renal disease, such as microalbuminuria. Ambulatory blood-pressure monitoring has already been used to show that abnormalities in the circadian pattern of blood pressure are directly correlated with evidence of renal disease.

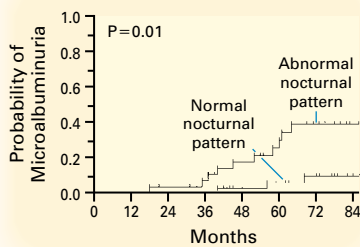
In this issue of the *Journal*, Lurbe and colleagues (pages 797–805) go one step further. They present findings suggesting that changes in the circadian pattern of blood pressure in patients with type 1 diabetes may predict the development of albuminuria. Specifically, the authors report that a relative increase in nocturnal blood pressure presages the subsequent development of microalbuminuria. They studied a cohort of 75 adolescents and young adults who had normal rates of albumin excretion and normal blood pressure, measured in the office and by means of ambulatory 24-hour monitoring, at the start of the study.

Ambulatory blood pressure was monitored again two years later, at which point all the patients still had normal albumin excretion. Microalbuminuria subsequently developed in 14 of the 75 patients. Those who did not have a nocturnal decrease in blood pressure were far more likely to have microalbuminuria in the subsequent years of follow-up. Such findings are of interest, since 24-hour ambulatory monitoring is a simple, noninvasive method of measuring blood pressure.

Does this mean that round-the-clock monitoring of blood pressure should become a standard procedure? Blood pressure not only follows a circadian rhythm but also varies from minute to minute, depending on levels of stress and physical activity, as well as other determinants of cardiovascular tone. Thus, blood pressure measured at a random moment cannot fully reflect blood-pressure levels around the clock.

Methods of recording round-the-clock blood pressure have been in use for 40 years, and easy-to-use

Nocturnal Blood Pressure and Microalbuminuria in Type 1 Diabetes



Although microalbuminuria presages diabetic nephropathy, it may be a relatively late sign. Nocturnal hypertension may be an early indicator of diabetic nephropathy. In this study, investigators used 24-hour ambulatory blood-pressure monitoring in a prospective study of 75 subjects with type 1 diabetes mellitus who had normal blood pressure and urinary albumin excretion at enrollment. Over time, microalbuminuria developed in 14 subjects. An increase in nocturnal blood pressure preceded the development of microalbuminuria. The normal nocturnal dip in blood pressure had a negative predictive value of 91 percent for the development of microalbuminuria and was associated with a 70 percent reduction in risk.

Ambulatory blood-pressure monitoring may provide a means of identifying patients with type 1 diabetes who are at risk for the development of microalbuminuria and subsequent nephropathy.

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devices have been widely available for at least the past 15 years, linked to computer programs that can process all the data points generated. In the past decade, the instrumentation for measuring round-the-clock blood pressure with ambulatory devices has become increasingly accurate and user-friendly. In April 2002, Medicare began covering the cost of ambulatory blood-pressure monitoring when prescribed to determine the presence or absence of “white-coat hypertension,” in which a person’s blood pressure is elevated in the doctor’s office, yet apparently not elevated elsewhere. Many insurers also cover the cost of ambulatory blood-pressure monitoring for the purposes of assessing blood-pressure control with medication and determining whether the circadian rhythm of blood pressure is normal

or disordered. Normal values for ambulatory blood pressure are available for adults and, to a lesser extent, for children and adolescents; in fact, a special terminology has been developed to describe the circadian rhythm.

Does ambulatory blood-pressure monitoring have drawbacks? There are very few, other than the slight inconvenience of wearing the device and the fact that not every monitoring session is technically successful and not all monitors are accurate. As for the cost, if ambulatory monitoring can provide a more accurate assessment of whether blood pressure is elevated or whether a dose of antihypertensive medication is effective, the associated costs will be more than offset by the savings involved, assuming, of course, that the findings can be used to avoid expensive evaluations, overmedica-

tion, and the like. Furthermore, if a person’s circadian blood-pressure pattern can be used to predict the risk of medical problems, it may be an invaluable clinical marker.

The findings reported by Lurbe et al., if confirmed, could argue for treatment with an angiotensin-converting–enzyme inhibitor or an angiotensin-receptor antagonist in patients with type 1 diabetes mellitus in whom relative nocturnal hypertension develops. Additional studies with long-term follow-up will be needed to learn whether these observations can be generalized to a larger group of patients.

JULIE R. INGELFINGER, M.D.



Cough and Bronchial Responsiveness in Firefighters at the World Trade Center Site

The collapse of and fires at the World Trade Center in New York on September 11, 2001, resulted in large quantities of airborne material. The authors report on a syndrome characterized by severe cough, reductions in forced vital capacity and forced expiratory volume in one second, and bronchial hyperresponsiveness in 332 firefighters who worked at the site. In most, the cough lasted more than six weeks but resolved spontaneously or with treatment. Computed tomographic scans showed air trapping and bronchial-wall thickening.

Workers involved in the rescue operations at the World Trade Center site had clinical, physiological, and radiographic changes consistent with the presence of airway dysfunction. Protection of the respiratory tract is essential in such settings.

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“Recent federal initiatives make office-based treatment more feasible in the United States.”

Clinical Practice: Office-Based Treatment of Opioid-Dependent Patients

A 30-year-old man reports a two-year history of heroin use. For the past year, he has been using intranasal heroin every day. He has undergone detoxification twice at a local opioid-abuse treatment program but began using heroin within two days after discharge each time. He has heard of methadone but fears that he will lose his business if he is recognized attending the local program. How should this patient be treated?

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Current Concepts: Respiratory Protection

Respiratory protection is important in many occupations involving exposure to gases, vapors, or particles, including biologic agents. This article reviews the types of respiratory protection and the necessity for the proper selection and use of these devices. Respirators have predictable physiological effects, and under conditions of low oxygen levels, improper use of a respirator increases the risk of asphyxiation.

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“The prescription requirement for hormonal emergency contraception jeopardizes women’s health.”

Sounding Board: Switching Emergency Contraception to Over-the-Counter Status

Hormonal emergency contraception is safe, effective, and available by prescription in the United States. This article explains why dropping the prescription requirement for emergency contraception would pose no risk to women and would improve public health by preventing unintended pregnancies. The author points out that over-the-counter sale of emergency contraceptive products is appropriate, because women are easily able to determine when and how to use them.

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