INTRODUCTION

In 1999, approx 179,300 American men will be diagnosed with prostate cancer (1). Many of these men will inquire about treatments designed to cure and/or control progression of their disease. Should they proceed with aggressive therapy, or should they elect observation and seek treatment only if the disease becomes symptomatic? Because early diagnosis offers the hope of a possible cure, why would some patients choose observation as the preferred treatment option? The answer lies in the complex interaction among the biology of the disease, the potential efficacy and morbidity associated with treatment, the risks posed by other competing medical hazards on a patient’s longevity, and a patient’s faith in medical therapy.

With the advent of widespread screening for prostate-specific antigen (PSA), an increasing number of men have been diagnosed with asymptomatic, localized, prostate cancer (2). They face decisions regarding treatment that do not turn on the need to relieve symptoms, but rather on the question of whether immediate, aggressive intervention will prevent the development of symptomatic disease in the future. When selecting among currently available treatment options, patients must weigh the potential benefit of increased longevity and improved quality of life against the potential risk of complications that are associated with treatment or the absence of treatment. Ideally, patients need information concerning the natural history of their disease, the increased longevity or symptom improvement provided by specific therapies, the frequency and severity of complications associated with these therapies, and the factors that predict outcomes for
specific subgroups of patients. Unfortunately, the data needed to perform these assessments are often either unavailable or lack precision. This chapter will review the currently available information concerning patient outcomes associated with conservative management and the multiple factors that should be assessed when making an informed decision concerning the appropriate treatment for localized disease. Only by carefully weighing the relative risks and benefits of several competing treatment strategies can patients, with the help of their physicians, determine a treatment algorithm that is most appropriate for them.

**RISK FACTORS ASSOCIATED WITH DISEASE PROGRESSION**

Prostate cancer differs from many other cancers in that it is a chronic disease. Many men can live symptom-free lives without treatment for years and occasionally even decades. Death from disease is a virtual certainty for men diagnosed with pulmonary or pancreatic carcinoma, but outcomes associated with prostate cancer are more variable. Researchers have identified several risk factors that are powerful predictors of the likelihood of disease progression. Some of these are tumor-specific factors, such as histology grade, DNA ploidy, and tumor volume at diagnosis, whereas others are host-specific factors, including a patient’s age at diagnosis and other coexisting health hazards or comorbidities. Each of these factors contribute to a patient’s long-term clinical outcome and help predict whether the patient is likely to die from his disease or simply with his disease. Those patients who face a low probability of dying from prostate cancer are ideal candidates for observation. Those patients who face a high probability of dying from their disease must carefully weigh the potential for increased longevity associated with different treatment strategies against the morbidity associated with treatment to determine whether aggressive treatment is warranted for them.

**Host-Specific Prognostic Factors**

Host-specific factors, such as race, family history, and possibly diet, are important factors that help determine the risk a patient faces of developing prostate cancer. After diagnosis, however, the host-specific factors known to predict long-term outcome are age at diagnosis, other coexisting medical hazards, and a patient’s social support structure.

**AGE**

Incidence and prevalence data highlight the strong correlation between age and mortality from prostate cancer (1). Although older men have a relatively high incidence of prostate cancer, death from disease is relatively modest when compared to other competing causes, such as heart disease and other cancers (Table 1). Because of the relatively slow growth of many prostate cancers, some physicians have argued against diagnosing and treating men who have a life expectancy of <10 yr (3). Based on 1994 life expectancy tables, this occurs around age 73 for men in average health (4) (Table 2). Most men diagnosed with localized disease in their mid-70s face a low probability of dying from their disease and therefore are good candidates for observation therapy.

**Competing Medical Hazards**

The presence of competing medical hazards can have a significant impact on survival among patients who present with localized disease. In a recently published retrospective analysis of 413 men diagnosed with clinically localized prostate cancer during the early