OBJECTIVE: To describe the natural history of initially untreated early-stage prostate cancer. A key secondary objective was to calculate long-term survival rates by stage, grade, and age at diagnosis.

DESIGN: Prospective cohort study.

SETTING: Population-based in 1 county of Sweden, without screening for prostate cancer.

PATIENTS: A group of 642 patients with prostate cancer of any stage, consecutively diagnosed between 1977 and 1984 at a mean age of 72 years with complete follow-up to 1994.

MAIN OUTCOME MEASURES: Proportion of patients who died from prostate cancer, and 15-year survival (with 95% confidence interval [CI]), corrected for causes of death other than prostate cancer.

RESULTS: In the entire cohort, prostate cancer accounted for 201 (37%) of all 541 deaths. Among 300 patients with a diagnosis of localized disease (T0-T2), 33 (11%) died of prostate cancer. In this group, the corrected 15-year survival rate was similar in 223 patients with deferred treatment (81%; 95% CI, 72%-89%) and in 77 who received initial treatment (81%; 95% CI, 67%-95%). The corrected 15-year survival was 57% (95% CI, 45%-68%) in 183 patients with locally advanced cancer (T3-T4) and 6% (95% CI, 0%-12%) in those 159 who had distant metastases at the time of diagnosis.

CONCLUSION: Patients with localized prostate cancer have a favorable outlook following watchful waiting, and the number of deaths potentially avoidable by radical initial treatment is limited. Without reliable prognostic indicators, an aggressive approach to all patients with early disease would entail substantial overtreatment. In contrast, patients with locally advanced or metastatic disease need trials of aggressive therapy to improve their poor prognosis.