The prevalence of bacteriuria - usually defined as bladder urine containing bacteria in excess of $10^5$ colony-forming units/ml increases with advancing age. Beyond age 60 this trend sharply accelerates, and is closely correlated with progressive musculoskeletal impairment. The 'spot' prevalence (i.e., the prevalence at any particular moment) and yearly incidence of bacteriuria appear to depend much more on the clinical status of the examined subjects than on their absolute age (1-4). Thus, the frequency of bacteriuria ranges from 6 to 50% in various groups of elderly subjects, and the higher rates are seen in institutions where the residents are kept at markedly reduced mobility (5,6).

In addition to its association with mobility impairment, bacteriuria has been correlated with brain failure: mentally impaired patients residing in institutions and requiring a high level of nursing care as a rule have positive urine cultures (4,7,8). Bacteriuria in the elderly produces few or no symptoms; voluntarily, most subjects do not declare any symptoms, so that this low grade infection generally is termed covert or asymptomatic.

IMPACT ON RENAL FUNCTION AND OTHER CLINICAL CORRELATES

Whether the initial source of this common infection is in the upper or the lower urinary tract, constant bacteriuria in old age is associated with measurable deficits of tubular and renovascular functions (9,10); thus, a predictable consequence in old age is damage of renal tissue. It is not clear, however, whether this damage is an effect of the infection or the background for its development. After a two-year follow-up of elderly subjects with covert bacteriuria, Marketos et al (11), showed that infected subjects had a yearly decline in glomerular filtration rate and renal plasma flow four to six times greater than did non-infected controls of the same age. Thus it appears that the unavoidable nephrosclerotic changes of old age are accelerated markedly by a longstanding urinary tract infection, even in the absence of symptoms.
A urinary-tract infection imposes several other long-term effects on health. For example, approximately one-half of hospitalized patients with either urinary or fecal incontinence have bacteriuria and commonly indwelling bladder catheters are inserted in such patients (7). Each year, approximately 500,000 acute urinary tract infections are seen in acute-care hospitals in the United States, and almost all are associated with indwelling bladder catheters (12) and many of these patients develop such alarming signs as rigors, fever, and septic shock. Such nosocomial infections result in nearly a threefold increase in inpatient mortality and delayed discharge from any medical service (13). In addition, in ambulatory older persons with acute urinary tract infections, the presence of pus cells and bacteria in the urine induces bladder sensitivity with associated sensory urgency and incontinence. These abnormalities may not disappear when the urine reverts to normal after treatment, so that long-term bladder catheterization may become necessary (7).

These clinical correlates of bacteriuria increase the rate of hospitalization and length of the hospital stay of older patients. They also result in excessive demands on paramedical services following hospital discharge, and thus contribute to the high cost of health care in the elderly of any population.

**BACTERIURI A AND MORTALITY**

Because the overall death rate increases rapidly with advancing age, the contribution of the major causes of death gradually changes. ‘Heart diseases’, mostly related to atherosclerosis remain the major ‘immediate’ cause of death in individuals older than 55 years, but the individual case may not record important factors contributing to mortality.

Furthermore, the contribution of the major risk factors to mortality from a given group of diseases appears to be different after age 65. Cholesterol levels and body mass index in men remain significant and independent predictors of death from ischemic heart disease, in contrast to blood pressure and cigarette smoking, which remain such predictors only of ‘all-causes’ mortality in older men and women (14).

The influence of bacteriuria on subsequent survival has been studied in men, in women, in both sexes, and in groups of various age composition. These studies may be divided into: those investigating patients who acquired bacteriuria in hospital as a result of catheterization (13,15,16); those on non-catheterized geriatric patients, who had multiple medical problems (4); and finally, those on groups of ostensibly healthy individuals living in residential homes for the elderly or at home (17,18,19).

A detailed study on 1458 acutely catheterized hospital patients (median age 60 years) indicates that nosocomial urinary-tract infection during indwelling bladder catheterization produces a nearly threefold increase in mortality even in the