Mass Screening for Prostate Cancer

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To screen or not to screen for prostate cancer remains a controversial question. The increasing incidence, for a large part explained by a rising awareness and active search for the disease, and the slightly increasing mortality, presumably real, unquestionably call for intensified efforts to improve the control of prostate cancer. When the patients become symptomatic they are usually out of the reach of radical treatment. Cure of the disease, if cure is possible, can be hoped for only in case the patient is identified in the asymptomatic stage.

Rather many programs for prostate cancer screening have been assayed. In the early 1970s the health authorities in Western Germany introduced a program, started by C-E Alken, one of the pioneers in German urology, where every male citizen over the age of 45 years had the right to undergo an annual digital rectal examination, paid for by the insurance system. The screening program is still going on. However, the acceptance among the male population has never been high. In the age group around 60 years, about 15% of the men participate. In centers where radical prostatectomy was performed on a larger scale, it was observed that a higher proportion of early stage cancers, suitable for radical surgery, were identified after the screening program had been introduced (1). In Japan, screening for prostate cancer, based on transrectal ultrasonography, was started in 1975 by H. Watanabe. Mobile units for investigation were equipped. The Japanese program was subsequently extended to include DRE and PSA tests. Like in Germany, a higher proportion of early stage cancers were detected. With respect to the markedly increasing incidence of prostate cancer in Japan, a research PSA-based screening project has been started with support from the Japanese health authorities (2).

It is natural that, with respect to the dimension of the problem in the Western World, different models of mass screening for prostate cancer have been launched. They are based on the fundamental principle in the management of cancer diseases, that by early detection smaller tumors are identified which are amenable to radical excision. Screening for breast cancer and cervical cancer has led to a decrease in the morbidity and mortality. The prostate, due to its location, is less accessible than the breast or uterine cervix for detection of small tumors. Still, modern screening techniques, based on total prostate specific antigen as the initial test and different additional diagnostic tests to improve specificity, have enabled a relatively good accuracy to detect presumably organ confined cancer. The article by J.B.W. Rietbergen and F.H. Schröder presents a comprehensive and penetrating review of the diagnostic tests and the state of prostate cancer screening with modern methodology.

It has been shown that prostate cancer screening leads to earlier diagnosis of prostate cancer than does clinical diagnosis in symptomatic men. However, there still remains uncertainty about the optimal management of early prostate cancer. In a relatively high proportion of those cases where the tumor appeared organ confined and where the patients were subjected to radical prostatectomy, capsular penetration was found in the operative specimens. In addition, it can be assumed that a number of those tumors, which were organ confined, belonged to that category where no treatment would be needed. So far, there is no unobjectionable evidence that the number of deaths caused by prostate cancer has been reduced as a consequence of screening.

With radical prostatectomy there is a significant risk of serious complications except in centers of high expertise. There have been proposals to confine the radical therapy to relatively few centers of excellence. It is true that refinements in surgical technique for radical prostatectomy have reduced its morbidity, but its curative potential remains uncertain. With screening there is inevitably a certain risk of over-diagnosis and over-treatment, serious in particular if side effects are not minor.

A critical evaluation of the potential gain vs hazards from mass screening for prostate cancer is presented in the article by E. Saksela. His skepticism is in agreement with a recent extensive evaluation of prostate cancer screening by the Swedish Council on Technology Assessment in Health Care (3). They came to the conclusion that 'there are no

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compelling reasons to recommend mass screening aimed at detecting early forms of prostate cancer', and that 'there is no sufficient reason at this time to recommend large randomized trials as a means to assess the total effects of mass screening on prostate cancer'.

If prostate cancer screening programs have so far left us with 'more questions than answers' (Rietbergen and Schröder), they should hopefully not lead to an attitude of defeatism. To combat the increasing morbidity and mortality of prostate cancer, we are in urgent need for more efficient strategies. However, a number of basic prerequisites of successful outcome are lacking at present. In particular, with the grading systems available and in spite of research on proliferation markers, we are still in lack of adequate indicators to select those tumors that are destined to be lethal but are still curable, and distinguish them from the not-likely-to-progress category. We need to focus resources on this kind of research. There is also a need for more atraumatic treatment of early prostate cancer, where the side effects are so minor that the inevitable over-treatment becomes acceptable. The latter achievement will not be easy unless radical prostate cancer surgery is practised in a high frequency.

Even though we are lacking a scientific basis to recommend mass screening for prostate cancer, there are reasons, in my opinion, to offer selective screening to men at elevated risk for prostate cancer with respect to their family history. In our continuing efforts to control prostate cancer it also appears recommendable to continue and support the research on well designed controlled screening studies.

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