Is it Worth Diagnosing Early Prostate Cancer?

Vijay Naraynsingh

Recently, widespread public education about prostate cancer has resulted in increased screening using PSA (prostate specific antigen) levels, DRE (digital rectal examination), TRUS (transrectal ultrasound) and, where indicated, prostate biopsy. One would assume from the popularity of these screening programmes that early diagnosis of prostate cancer would benefit the patient – but, is it really so? In the Caribbean, where personnel and material resources are limited, it is imperative that the value of screening asymptomatic men for prostate cancer be critically examined.

Apart from the actual expense of PSA, TRUS and biopsy, there are other "costs" more difficult to quantify, such as time off work, the discomfort and complications of biopsy, and the stress and anxiety of the patient. Ethical considerations are also important to us as health care professionals: these costs in relation to the benefit for each person subjected to the screening tests; and the possibility that limited resources will be diverted from other areas where they could be used more efficiently.

It has been estimated that the cost of diagnosing each case of prostate cancer is about US$3,750. The failure of PSA as a diagnostic test was impressively established in a prospective study of 22,000 men, where elevated PSA was found in only 47% who developed prostate cancer (2). Further, for each cancer diagnosed, two to 12 patients will have had biopsies with their attendant costs and complications (3), leading to the conclusion of the Canadian Task Force that "there presently is insufficient evidence to promote the early detection of prostate cancer in asymptomatic men". The Canadian Task Force also had previously recommended that PSA not be used routinely as a screening test for prostate cancer in asymptomatic men (4). However, if and when screening identifies the patient with early prostate cancer, what management can he be offered?

There is as yet no compelling evidence that treating these patients by radical prostatectomy or radiotherapy improves survival over simple observation. A study in which 223 prostate cancer patients were followed over a mean observation time of 12.5 years (without prostatectomy), showed a 91% disease specific survival rate after 10 years (5). In a study of 1143 patients with radical prostatectomy, the disease specific survival rate at 10 years was 90% (6), and there was a 10 year disease specific survival of 77% among 682 patients treated by radiation (7). A careful review of 828 patients from six non-randomised studies revealed an 87% 10 year survival in selected patients managed conservatively (8). Survival rates varied with tumour grade, but there was no evidence that intervention produced significant benefit. Moreover, care must be exercised in interpreting studies that show better results with radical prostatectomy since such patients are often highly selected (not randomised) – younger, fitter, with well localised, well differentiated tumours. However, in the only truly randomised trial I could find comparing radical surgery to conservative management, the mortality was similar in each group (9). The paucity of strong data is highlighted by a literature review of over 1,600 publications on localised prostate cancer treatment, in which it was not possible to identify any study that was large enough, and which had been conducted for a sufficiently long period of time, to demonstrate efficacy of treatment unequivocally (10). Well planned prospective randomised trials have started only recently and valid results cannot be expected before 2,007 (11). It has not yet been established unequivocally, therefore, that prostate cancer specific morbidity and mortality can be reduced by screening. An analysis of the natural history of early prostate cancer showed a median interval of more than 15 years to metastasis in men with a mean age of 67.5 years (12). None of the patients in this study died of prostate cancer within 5 years of diagnosis and the actuarial 15-year survival rate in these men approximated the expected survival rates in a male population of comparable age.

Because of the lack of evidence that a reduction in prostate cancer mortality is achieved by any test or procedure, cost-effective calculations of early prostate cancer detection are not possible (13). Widespread screening efforts in the USA will probably cost billions of dollars (14). Can the USA afford this? Can the Caribbean afford such an expensive exercise that is of unproven value? Can we tolerate the complications of screening and treatment that have well established morbidity and mortality risks but are yet of unknown, unproven benefit?

The agony that patients may experience by these interventions is an unquantifiable but, potentially, more disastrous cost as described recently by a businessman (15). He recorded his own experience of having an elevated PSA and described "an airline pilot who had his prostate gland removed surgically and was bitter beyond words. He claimed that it cost him his health, his job, his marriage and that it ruined his life" (15). He also asserted that "the reports of incontinence and impotence were dramatically worse" when patients were questioned directly than when one looked at data "according to the sur-

Correspondence: Professor Vijay Narynsingh Department of Surgery, Eric Williams Medical Sciences Complex, Champs Fleur, Trinidad

West Indian Med J 1998; 48 (2): 50 – 1

geons who write papers". Most cancers detected by screening are indolent, non-aggressive and most patients with these cancers die with, rather than of, prostate cancer. Treatment of these with radiation or radical prostatectomy can result in significant morbidity, especially impotence and urinary incontinence, without a proven decrease in mortality (16). In the Caribbean one must be mindful of these complications that may make patients physical or psychological cripples. The unequivocal demonstration of significant benefit should become an economical and ethical imperative before one embarks on screening and treatment for asymptomatic prostate cancer.

Considering all the evidence, I suggest that we abandon this screening and intervention in asymptomatic West Indian men until results show some unambiguous benefits. For the Caribbean male, PSA continues to mean "Producer of Stress and Anxiety".

REFERENCES

1 Pederson K, Carlsson P, Varenhorst E, Lofman O, Berglund K. Screening for carcinoma of the prostate by digital rectal examination in a randomly selected population. Brit Med J 1990; **300:** 1041-3.

2 Gann PH, Hennekens CFL, Stampfer MJ. A prospective evaluation of plasma prostate-specific antigen for detection of prostate cancer. JAMA 1995; **273:** 289-94.

3 Feightner J. The early detection and treatment of prostate cancer: the perspective of the Canadian Task Force on the Periodic Health examination. J Urol 1994; **152:** 1682-4.

4 Canadian Task Force on the Periodic Health Examination. The periodic health examination, 1999 update 111. Secondary prevention of prostate cancer. Can Med Assoc J 1991; **145:** 413

5 Johansson JE. Expectant management of early stage prostatic cancer: Swedish experience. J Urol 1994; **152:** 1753-6.

6 Zincke H, Bergstrath EJ, Blute ML. Radical prostatectomy for clinical localised prostate cancer: long term results of 1143 patients from a single institution. J Clin Oncol 1994; **12:** 2254-63.

7 Hanks GE, Diamond JJ, Krall JM, Martz KL, Kramer S. A ten year follow-up of 682 patients treated for prostate cancer with radiation therapy in the United States. Int J Radiation Oncol Biol Phys 1987; **13:** 499-505.

8 Chodak GW, Thisted RA, Gerber GS, Johansson JE, Adolfsson J, Jones GW, et al. Results of conservative management of clinically localised prostate cancer. N Engl J Med 1994; **330:** 242-8.

9 Madsen PO, Graversen PH, Gasser JC, Corle DK. Treatment of localised prostate cancer: radical prostatectomy versus placebo: a 15 year follow-up. Scand J Urol Nephrol 1988; (suppl) **110:** 95-100.

10 Wasson JH, Cushman CC, Bruskewith RC, Littenberg B, Mulley AG, Wennberg JE. A structured literature review of treatment for localised prostate cancer. Arch Fam Med 1993; **2:** 487.

11 Wirth MP, Spiegel T, Froschermaier SE, Manseck A. Screening in prostate cancer. Zeitschrift Fur Arztliche Fortbildung Und Qualitatssicherung 1988; **92:** 304-9.

12 Warner J, Whitmore WF. Expectant management of clinically localised prostatic cancer. J Urol 1994; 1761-5.

13 Littrup PJ, Goodman AC, Mettlin CJ. The benefit and cost of prostate cancer early detection. The Investigators of the American Cancer Society National Prostate Cancer Detection Project,CA Cancer J Clin 1993; **119:** 914-24.

14 Kramer BS, Brown ML, Porok PC, Potosky Al, Gohagan JK. Prostate cancer screening: what we know and what we need to know. Ann Intern Med 1993; **119:** 914-23.

15 Grove A. Taking on prostate cancer. Fortune 1996; May 13: 55 – 70.

16 LeFeuvre W. Prostate cancer screening: More harm than good? Amer Family Physician 1988; **58: 2** 432-8.