In 2124, half of all men can count on developing prostate cancer

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We now realize that with early detection comes early treatment, which requires balancing the risk of death from cancer with the risk of adverse effects from treatment. After radical prostatectomy, the percentage of patients experiencing moderate-to-severe urinary incontinence is about the same as the percentage of men who die from the disease, and more than half of all treated men can expect some persistent erectile dysfunction for a year or more after surgery.6 The incidence of sexual side effects is about the same for patients who elect radiotherapy over surgery, although the effects develop more slowly.

So, how should physicians and patients react to a disease with a lifetime risk of 1:5?

When prostate cancer patients were asked to interpret various ways in which risk was presented, they favoured simple statistics such as absolute risk over other measures such as odds ratios and relative risk, which they found more difficult to understand.7 However, simple risk ratios say nothing about the impact of the disease on either survival or quality of life. They also provide no information that could help a patient assess the benefits of treatment against the risks.

All of which brings us to the title of this essay. Figure 1 uses data pulled from the U.S. literature to plot the lifetime risk of a prostate cancer diagnosis. Our earliest data point comes from 1973. Back then, 1 man in 16 could expect to be diagnosed with the disease. Between 1973 and 2013, 38 available data points document the increase in the reported incidence of prostate cancer over 40 years.

Looking at the positive slope of the line in Figure 1, a question arises: At what future date can half of all men be expected to receive a diagnosis of prostate cancer during their lifetime? By extrapolation, a ratio of 1:2 is reached in just 110 years. Although that approximation is a rough one, we do not think it premature to ask how much more distressing a ratio of 1:2 will be if a ratio of 1:5 already seems distressingly high.
Our extrapolation is, of course, far enough into the future that dramatic changes in life expectancy (perhaps from better cures for prostate cancer) could make it of little consequence or interest. But working from a contemporary mindset, we believe that a prevalence of 1:2 will likely scare many men even more than a risk ratio of 1:5 does. The fear of having prostate cancer—or, for that matter, any cancer—seems to trump the suggestion that we are overusing diagnostics such as the PSA test.

Epidemiologic data show only a modest overall benefit from PSA testing. That observation led the U.S. Preventive Services Task Force to make their controversial 2012 recommendation to reduce testing. In October 2014, the Canadian Task Force on Preventive Health Care made a similar recommendation. There is some evidence that the U.S. recommendation led to lesser PSA testing by primary care physicians in that country, but patients under the care of urologists weren’t taken into consideration.

Of men who are tested and found to have early prostate cancer, more and more are being offered active surveillance rather than radical treatments; however, factors influencing acceptance of and adherence to active surveillance have not been well explored. Despite a strong push to have men view prostate cancer as a chronic illness like diabetes or hypertension, numbers such as 1:5—or worse, 1:2—are just too scary for many men to tolerate.

What, then, would it take to have men accept prostate cancer as a chronic disease to be lived with, rather than a life-threatening condition to be aggressively treated? If we ask the question “How far must the line in Figure 1 be extrapolated to arrive at a time when all men can expect to be diagnosed with prostate cancer,” the answer is 261 years. Such an extrapolation opens the way to speculation about how the attitude toward a prostate cancer diagnosis and its treatment might shift if men are informed that all of them will develop the disease.

We acknowledge that the linear regression in Figure 1 is overly simplistic; some curvilinear fit would be more realistic. Extrapolating as far forward as 261 years on just 40 years of data (and without any confidence intervals around those data) imparts little faith that the forecast year is particularly reliable. But the precise year when all men will be diagnosed with prostate cancer is not the issue. The fact that the line has a positive and significant slope affirms that the risk of a man developing prostate cancer is increasing and that all men, if they live long enough, can expect to get the disease.

More than 200 years might seem far off, particularly given that prostate cancer wasn’t even a definable disease 200 years ago. George Langstaff’s 1817 report of an abnormal prostate gland in a 68-year-old man with urinary obstruction was the first publication congruent with the modern understanding of adenocarcinoma of the prostate. However, it wasn’t until 1853 that John Adams described the histopathology that formally characterizes the disease. What is relevant now is Adams’s assertion that the disease was “a great rarity.” Notably, Langstaff’s and Adams’s patients were both quite old for men in the 19th century.

So, what was “a great rarity” in 1853—and was ostensibly unknown 200 years ago—is now...
the most common neoplasm in men. But men can respond quite differently to a condition that is common than to a condition that everyone has. Our guess is that, compared with a 1:5 or 1:2 ratio, a 1:1 ratio would lead to a very different perspective on prostate cancer.

The increasing incidence of prostate cancer is first and foremost a testimony to the overall improvement in health care since prostate cancer was first identified in the early 1800s. If prostate cancer isn’t yet viewed as a chronic disease that rarely warrants radical treatment, it is certainly heading in that direction. There is no need, though, to wait some 261 years to view it that way. Humanity could immediately benefit from accepting prostate cancer as a chronic illness that rarely needs treatment.

CONFLICT OF INTEREST DISCLOSURES

We have read and understood Current Oncology’s policy on disclosing conflicts of interest and declare that we have none.

REFERENCES


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