ProstaScint aids radiation treatment for recurrent prostate cancer

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CONTEXT: Nuclear physicians and radiation oncologists at the University of Illinois and the University of Chicago have demonstrated that radioimmunoscintigraphy (RIS) employing the radiolabeled monoclonal antibody ProstaScint improves radiation treatment planning for patients with recurrent prostate cancer. The protocol enhances targeting of recurrent cancerous tissue to focus treatment with external-beam radiation therapy.

RESULTS: The study was conducted in a population of 107 patients who had undergone radical retropubic prostatectomies and were receiving external-beam radiotherapy. Of the group, 54 did not receive a RIS scan, 40 received RIS scans with correlating CT imaging (the fusion group), and 13 were scanned only with RIS (the RIS group). By identifying biochemical failures (two consecutive PSA rises to a level of greater than or equal to 0.2 ng/mL after a nadir) in each patient, researchers charted biochemical failure-free survival (BFFS) curves for each group. Based on three years of data, they found that 81% of the RIS group was still living, compared with 76% of the non-RIS group. The advantage in the BFFS rate for the fusion group was even greater when compared with the non-RIS group: 84% vs. 76%.

IMAGE: ProstaScint SPECT helps circumscribe a more accurate anatomic target for radiotherapy than CT alone. Fusion SPECT/CT image (top) illustrates histologically confirmed right iliac nodal disease. In another case (bottom), the region of interest in the right iliac nodal region, based on the ProstaScint SPECT images and the CT region of interest, is in red. Note that SPECT increases the volume of the target zone.

IMPLICATIONS: Using radioimmunoscintigraphy that targets the prostate-specific membrane antigen (PSMA), radiation therapists can more precisely treat prostate cancer without significantly increasing nontarget tissue damage, according to coauthor Dr. Michael J. Blend, director of nuclear medicine at the University of Illinois at Chicago.

"One of the difficulties is interpreting the ProstaScint SPECT volume data set fused with the CT volume data set," Blend said. "You can buy some commercial software that does this, but it is a fairly recent development for the nuclear medicine community."

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