

Prostate cancer vaccines more effective with hormone therapy

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Among patients with castration-resistant prostate cancer, the addition of hormone therapy following vaccine treatment improved overall survival compared with either treatment alone or when the vaccine followed hormone treatment, according to recent data published in the July 15 *Clinical Cancer Research*, a journal of the American Association for Cancer Research.

Philip M. Arlen, M.D., director of the Clinical Research Group for the Laboratory of Tumor Immunology and Biology, Center for Cancer Research, at the National Cancer Institute, said the findings have important implications for guiding treatment decisions for prostate cancer patients.

"Vaccines, if and when they are approved, can be safely and effectively combined with other therapies, including hormones," said Arlen. "There appears to be an advantage in overall survival."

Arlen and colleagues enrolled 42 patients who had castration-resistant prostate cancer. These patients were randomly assigned to receive either a poxvirus-based prostate-specific antigen vaccine or hormone therapy with nilutamide. At progression, patients received the other therapy and continued to receive their original therapy.

For all the patients enrolled in the study, the three-year survival probability was 71 percent and the median overall survival was 4.4 years. Patients randomized to the vaccine had a three-year survival probability of 81 percent and an overall survival of 5.1 years, while patients taking nilutamide had a three-year survival probability of 62 percent and an overall survival of 3.4 years.

Of the 42 patients in the study, 12 patients who were originally assigned to vaccine switched to nilutamide plus vaccine and eight patients who were originally assigned to nilutamide switched to vaccine plus hormone, due to rising levels of prostate-specific antigen with no evidence of

metastasis. For patients who received vaccine and then nilutamide, the three-year survival probability was 100 percent with a median overall survival of 6.2 years. For patients who switched to the vaccine after hormone, the three-year survival probability was 75 percent with a median overall survival of 3.7 years.

Arlen said the hormone therapy in combination with the vaccine works in two ways.

"By using hormone therapy in prostate cancer you can help enhance your T-cell response to where the cancer is in the prostate gland, and you are also more likely to achieve a better immune response," said Arlen.

Building on the results of this phase II study, researchers have developed another generation of this vaccine by adding molecules which boost T-cell responses.

Based on the current pace of vaccine research overall, Arlen predicts that men with prostate cancer could potentially see an effective, new treatment vaccine within the next several years.

"Phase II trials such as this one are adding to our knowledge, and other phase III trials are getting ready to publish their data," said Arlen. "If the phase II data hold up in phase III trials, we could see a new treatment vaccine within a few years."

Source: American Association for Cancer Research

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