

 PROSTATE CANCER

Immunotherapy with PPV effective

Data from a new phase II trial investigating personalized peptide vaccine (PPV) therapy in patients with chemotherapy-naive castration-resistant prostate cancer (CRPC) show that men receiving the PPV had significantly longer progression-free survival (PFS) and overall survival than men in the control group.

The study, which was performed at two centres in Japan, included 73 patients who were randomized 1:1 to receive the PPV plus low-dose dexamethasone or dexamethasone only. In their PPV approach, the investigators first screened a set of 24 peptides for immune responses mediated by cytotoxic T lymphocytes using patient serum that had been collected before vaccination. For each patient, they then selected up to four reactive peptides to be used for immunization.

Although differences in >50% decline in PSA levels at week 12 were not statistically significant, median PFS significantly differed between the PPV group and the control group (22 months versus 7 months, respectively; $P = 0.0076$; progression defined as two consecutive increases of 25% in PSA levels ≥ 2 weeks apart). In addition, estimated median overall survival was around 39 months longer in the PPV group than in the control group ($P = 0.00084$). “We think that the statistical difference in overall survival is the most important finding,” senior author Hirotsugu Uemura told *Nature Reviews Urology*. “Few previous studies of immunotherapy in patients with CRPC have indicated marked improvements in overall survival; our finding might be due to enrolment of early-stage patients in our study.”

The PPV immunotherapy was well tolerated, with no toxicities of grade ≥ 3 observed, and the team are now planning to perform a phase III trial in a larger cohort of patients. “We are also interested in a nonpersonalized approach using a vaccine containing multiple peptides, because the use of a fixed multi-peptide mixture might be more feasible with an easier patient screening system,” Uemura concludes.

Clemens Thoma

ORIGINAL ARTICLE Yoshimura, K. *et al.* A phase 2 randomized controlled trial of personalized peptide vaccine immunotherapy with low-dose dexamethasone versus dexamethasone alone in chemotherapy-naive castration-resistant prostate cancer. *Eur. Urol.* <http://dx.doi.org/10.1016/j.eururo.2015.12.050> (2016)