Drug that restricts blood supply to prostate tumors delays disease progression

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A blood vessel-blocking drug called tasquinimod slowed the rate of disease progression in a clinical trial of 200 prostate cancer patients, according to experts at Johns Hopkins, Roswell Park Cancer Institute and Duke University.

Tasquinimod is a so-called "anti-angiogenesis" drug that squeezes off blood supply to prostate tumors by blocking new blood vessel development. Tumors require these vast networks of blood vessels to supply nutrients.

The multicenter trial at seven institutions, including Johns Hopkins, enrolled prostate cancer patients whose disease had spread to take a once-daily pill for four weeks. At six months, 57 percent of men taking tasquinimod had no disease progression as compared with 33 percent taking a placebo. Overall, the drug added approximately 12 weeks of time that the disease did not worsen (progression-free survival).

The most common side effects included gastrointestinal problems, fatigue and bone pain, and some rare occurrences of heart attack, stroke and deep vein thrombosis.

"Given these results, we feel it is reasonable to move forward with Phase III studies," says Michael Carducci, M.D., professor at the Johns Hopkins Kimmel Cancer Center, who will lead the next phase of an international study of the drug. "After exploring the drug as a single agent, we may study it in combination approaches with other prostate

cancer drugs."

Research leading to tasquinimod began in the early 1990s when John Isaacs, Ph.D., professor at the Johns Hopkins Kimmel Cancer Center, found that a drug called linomide, which had been tested in multiple sclerosis, restricted blood supply to prostate tumors. However, the drug's cardiac side effects were too toxic for humans, so Isaacs in collaboration with the pharmaceutical company Active Biotech identified tasquinimod for clinical testing after searching for drugs similar to linomide with the same blood vessel action but with less toxicity.

Isaacs says that tasquinimod works by stopping new blood vessel development around the tumor, but does not make existing vasculature disappear. "The idea for anti-angiogenesis drugs is not to prevent tumors from developing; rather, it is to stabilize disease," says Isaacs, who is conducting additional laboratory studies to identify the drug's precise cellular target.

Funding for the study was provided by Active Biotech, manufacturer of tasquinimod, and the U.S. Department of Defense.

Carducci is a paid consultant to Active Biotech and the terms of this arrangement are being managed in accordance with policies set by the Johns Hopkins University.

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