

Longer life expectancy, aging population necessitate new strategies for prostate cancer care

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The population of the United States is getting older, due not only to aging boomers but also to a four-year increase in life expectancy from 1990 to 2010. An aging population means increased diagnosis of prostate cancer. Statistically, the older the patient at time of diagnosis, the more aggressive the disease – and also the less well the patient is likely to tolerate traditional chemotherapies. In sum, we have more, aggressive prostate cancer that can't be targeted by traditional treatments.

Members of the University of Colorado Cancer Center recently published a review in the journal *Drugs and Aging* describing the modern state of prostate cancer care – examining not only <u>new drugs</u> but entirely new classes of drugs that may be effective and well-tolerated in these aging patients.

"For patients with advanced prostate cancer, there are more options than ever before. But with more options comes a more complex decision tree in choosing appropriate therapies," says Elizabeth Kessler, MD, oncology fellow at the University of Colorado Cancer Center and the review's lead author.

First among these options are targeted therapies. Modern targeted therapies are able to selectively kill <u>cancer cells</u> as opposed to accepting high collateral damage in healthy tissue and so frequently have fewer side effects than traditional chemotherapies. (And are thus better



tolerated by elderly patients.)

"These are drugs like <u>abiraterone</u> and enzalutamide that have been approved for use in late stage prostate cancer and are now being evaluated for earlier use," Kessler says. Prostate cancer generally depends on <u>androgen hormones</u> like testosterone to survive and grow – even after traditional hormone blockade, the body continues to produce minute amounts of testosterone and even this little bit is enough to drive prostate cancer. By completely removing the body's ability to produce testosterone or the cancer's ability to use it, these drugs break the messaging chain that tells prostate cancer to grow. CU Cancer Center researchers have played an important role in the clinical development of both of these drugs.

Researchers are also looking for additional, molecular drivers of prostate cancer, perhaps for example insulin growth factor.

"We're also exploring the use of targeted kinase inhibitors," Kessler says. For example, the <u>drug</u> known as XL184 by Exelixis is currently in clinical trials to target MET and VEGF, "and appears to show effect against bone lesions, the most common location of prostate cancer metastasis," Kessler says.

"Another promising strategy to treat metastatic prostate cancer is immunotherapy," Kessler says. In immunotherapy, drugs, devices or treatments are used to sensitize the body's immune system to attack cancer cells – boosting the body's ability to clear itself of cancer. For example, the drug Sipuleucel-T was approved by the FDA in 2010 for treatment of metastatic prostate cancer – "but it requires blood to be removed, treated, and reinfused," Kessler says – a procedure that can only be accomplished by shipping the patient's blood to facilities in other cities before reinfusing it here. Second generation prostate cancer immunotherapies including Prostvac are in development or clinical trials,



including an open trial at the CU Cancer Center.

Finally, researchers are exploring ultra-precise targeting of radiation that rides along with drugs that attach to bone metastases and affects only the tumor cells in the immediate areas of attachment. "One of these drugs is Alpharadin," Kessler says, "which goes only shallowly into bone and so targets lesions without stopping the production of bone marrow."

"There has been a major shift in the acceptance of these drugs," Kessler says. "We're learning to reach for them sooner and more frequently in place of traditional chemotherapies."

This shift means that just as boomers pass age 65 – the most common time of <u>prostate cancer</u> diagnosis – researchers have a handful of new barriers to put in the path of the disease.

Provided by University of Colorado Denver

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