Proton therapy is well-tolerated in prostate cancer patients

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Proton beam therapy can be safely delivered to men with prostate cancer and has minimal urinary and rectal side effects, according to a study presented November 2, 2009, at the American Society for Radiation Oncology's 51st Annual Meeting in Chicago.

Researchers sought to determine if delivering higher doses of radiation with proton therapy would cause early harmful side effects to urinary function within the genitourinary system (GU) function and rectal function within the gastrointestinal (GI) system.

"Proton therapy is becoming more popular as a treatment for prostate cancer, but it is unclear at this point whether the long-term outcomes with proton therapy will be better than those achieved with other treatments. These protocols were designed to establish benchmark results with proton therapy given with relatively high daily doses. At this point, we can say that early tolerance of proton therapy has been excellent, with a very low rate of urinary and rectal toxicity," Nancy Mendenhall, M.D., a study author and medical director of the University of Florida Proton Therapy Institute in Jacksonville, Fla., said. "This study shows that prostate cancer patients can receive proton therapy with a very low likelihood of compromised urinary or rectal function."

Proton beam therapy is a form of external beam radiation treatment that uses protons rather than photons (X-rays) to treat certain types of cancer and other diseases. The physical characteristics of the proton therapy beam allow the radiation oncologist to deliver more radiation to the

tumor with less radiation to nearby healthy tissues.

During external beam radiation therapy, a beam of radiation (X-rays or protons) is directed through the skin to the cancer and the immediate surrounding area in order to destroy the main tumor and any nearby cancer cells.

From August 2006 to October 2007, 212 prostate cancer patients enrolled in one of three prospective trials to receive proton therapy. High-risk patients also received the chemotherapy drug, docetaxol, followed by hormone therapy. Researchers followed the patients for at least a year after treatment and examined the genitourinary and gastrointestinal toxicity scores using both International Prostate Symptom Scores (IPSS) and Common Toxicity Criteria for Adverse Events (CTCAE, v. 3) for each patient.

Findings show that there was minimal early GU and GI toxicity on prospective trials of proton therapy. Less than one percent of patients had severe Grade 3 genitrourinary side effects. There was a significant association between GU side effects after treatment and patients' pretreatment urinary function. Less than one-half percent of patients experienced Grade 3 gastrointestinal toxicities. The most common gastrointestinal side effect was minimal rectal bleeding, which was associated with the percentage of rectal wall receiving a range of radiation doses. The incidence and severity of rectal symptoms were also impacted by post-treatment colonoscopic interventions.

"These results are very encouraging. While some toxicities may occur later, we are very pleased with the early toxicity profile in comparison with other treatment options. Further follow-up will be necessary to ensure that these men do not have any side effects that appear years after the treatment," added Dr. Mendenhall.

Source: American Society for Radiation Oncology