Target therapy for bone metastatic prostate cancer with micro RNA145 inhibits tumor growth in vivo

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Extended Abstract

Abstract:

Background: The metastatic prostate cancer presents unfavorable, without cure and with high comorbid and low quality of life. Micro RNA (miRNA) is a class of non-coding RNA responsible for the expression control of at least 30% of human genes. Here we present the effects of treatment with miRNAs 145 in a pre-clinical model of disseminated bone metastatic prostate cancer. Methods: The pre-clinical model was created by the intra-cardiac injection of the cell line containing luciferase gene PC3-Luc-C6 in nude mice (Balb/c). Tumor growth was evaluated with in vivo bioluminescence (IVIS). After the full establishment of the bone metastasis at day 21 we treated the animals with three tail vein injections. They were analyzed weekly until day 48. Results: The model of bone metastatic prostate cancer was well stablished with diffuse metastasis on day 21. We treated the animal intravenously with the microRNA conjugated with atelocollagen on days 21, 24 and 27. Immediately in a period of one week after the treatment the tumor stops to grow and reduces the activity. After this temporally tumor suppressor action, the tumors starts to grow again. Conclusion: In animals with diffuse metastatic disease, the treatment with mir145 leads to a temporally response due to a fast degradation of these microRNAs and to cancer cells mechanisms of scape and resistance. Further studies with this purpose and design will permit the development of novel target drugs based on microRNAs for suppressing the metastatic prostate cancer growth.

The prostate is a little pecan molded organ in the pelvis of men. It is situated close to the bladder and can be inspected by getting an advanced rectal test. Prostate malignant growth is a type of disease that creates in the prostate organ. It is the second-driving reason for malignant growth passings for men in the U.S., around 1 out of 9 men will be determined to have prostate malignant growth in the course of their life. This year, almost 191,000 men will be determined to have prostate malignant growth. Developments in the prostate can be kindhearted (not disease) or harmful (malignant growth).

Prostate malignant growth cells can spread by splitting ceaselessly from a prostate tumor. They can go through veins or lymph hubs to arrive at different pieces of the body. In the wake of spreading, malignant growth cells may join to different tissues and develop to shape new tumors, causing harm where they land. At the point when prostate malignant growth spreads from its unique spot to another piece of the body, the new tumor has a similar sort of unusual cells and a similar name as the essential (unique) tumor. For instance, if prostate malignant growth spreads

to the bones, the disease cells during the bones are really prostate malignant growth cells. The malady is metastatic prostate malignant growth, not bone disease. Hence, it's treated as prostate malignant growth in bone. Doing things that are "heart solid", will likewise keep your prostate sound. Eating right, working out, watching your weight and not smoking can be useful for your wellbeing and assist you with dodging prostate disease.

Much of the time, prostate malignant growth is generally moderate developing, which implies that it can take a very long time to turn out to be sufficiently huge to be perceptible, and significantly longer to metastasize outside the prostate. In any case, a few cases are progressively forceful and need increasingly dire treatment. At the point when a man is determined to have prostate malignant growth, his treatment group will assess his disease and his general wellbeing to hand craft a treatment way that will give him the best possibility of beating the malignant growth. Treatment can extend from a pause and-watch way to deal with a forceful clinical and careful arrangement.

Some medicinal services suppliers accept drugs can forestall prostate disease. Others accept they just moderate the advancement of prostate malignant growth. Studies do show that men consuming these medications were more averse to be determined to have prostate malignant growth. All things considered, it isn't clear if these medications are full of feeling so you should converse with your primary care physician about the conceivable reactions.

Foundational medicines influence the entire body. As a rule, particularly if the disease has spread to numerous bones, foundational medicines are utilized on the grounds that they can arrive at malignancy cells all through the body. Fundamental treatments incorporate chemotherapy, hormone treatment, or different medications that are taken by mouth or infused into the blood. These medicines are not pointed explicitly at bone metastases, however they frequently help treat them. Other foundational medicines, for example, radiopharmaceuticals and bisphosphonates, are pointed all the more explicitly at malignant growth that has arrived at the bones. Here and there both of these kinds of medicines are utilized simultaneously.

Techniques to murder malignant growth cells with warmth or cold may help control torment. These strategies might be a choice on the off chance that you have a couple of territories of bone metastasis and aren't helped by different medicines. During a strategy called radiofrequency removal, a needle containing an electric test is embedded into the bone tumor. Power goes through the test and warms the encompassing tissue. The tissue is permitted to chill off, and the procedure is rehashed. A comparative method called cryoablation freezes the tumor and afterward permits it to defrost. The procedure is rehashed on numerous occasions. Reactions can incorporate harm to close by structures, for example, nerves, and harm to bones that can build the danger of a messed up bone.

Biography:

Alexandre Iscaife graduated in medicine by Medical School of the State University of Campinas - FCM / UNICAMP, residency in General Surgery and Urology by the Paulista Medical School - EPM / UNIFESP. As an undergraduate the focus of research was experimental and angiogenesis

surgery. He is currently attending physician of prostate sector of the Division of Urology, Faculty of Medicine, USP (USP) and researcher at the Urology Laboratory (LIM55) - USP where investigates molecular target treatment pathways and experimental models of prostate cancer. Has experience in the area of urology, with emphasis on Prostatic Hyperplasia, Oncology and Endourology.

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