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Promising new drug development could treat cachexia

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According to the National Cancer Institute, nearly one-third of cancer deaths can be attributed to a wasting syndrome known as cachexia. Cachexia, an indicator of the advanced stages of disease, is a debilitating disorder that causes loss of appetite, lean body mass and can lead to multi-organ failure. Now, researchers at the University of Missouri in partnership with Tensive Controls, Inc. have developed a drug that could reverse cachexia. The team currently is seeking canine candidates for a pilot study to test the new drug.

"The goal of this drug trial is to extend and improve the quality of life of cancer patients who are suffering from cachexia," said Sandra Bechtel, associate professor of medical oncology at the MU Veterinary Health Center and principal investigator for the drug clinical trial. "The clinical trial is targeting a disease that significantly decreases quality of life. We are working to improve end-stage quality of life for our veterinary patients with the hopes of translating the improvements to human patients."

Cachexia is caused by inflammatory cytokines, or small proteins that when released have an effect on the behavior of the cells around them. Certain cytokines in the brain cause the body to be hyperactive, decreasing appetite and causing weight loss in individuals with cachexia.

Kenneth A. Gruber, principal investigator at the MU Dalton Cardiovascular Research Center and president and founder of Tensive Controls, Inc., and his team have developed a drug that is able to cross

the blood brain barrier, a protective barrier that typically prevents drugs, toxins or microbes from entering the brain, and inhibits overstimulation of the melanocortin system. The drug is administered via a subcutaneous, below the skin, injection.

"Preliminary results of the trial are promising," said Gruber, who also holds an appointment as a professor of pharmacology and physiology in the MU School of Medicine. "Three dogs have already received the drug therapy and have gained an average of 7.5 percent of their body weight back over a 28-day trial. Dogs who have taken the drug for longer periods of time have improved to ideal body condition."

The clinical trial is taking place at the MU Small Animal Hospital and is the first site to offer the drug as part of a clinical trial to patients. The trial is currently enrolling dogs for treatment. To inquire about enrolling a dog, call (573) 882-7821 and ask to speak to Deb Tate or Sandra Bechtel or email Deb Tate at tated@missouri.edu or Sandra Bechtel at bechtels@missouri.edu.

The early-stage results of this research are promising. If additional studies are successful within the next few years, MU and Tensive Controls officials will request authority from the federal government to begin human drug development (this is commonly referred to as the "investigative new drug" status). After this status has been granted, researchers may conduct human clinical trials with the hope of developing new treatments for cancer cachexia in people.

Provided by University of Missouri-Columbia