High BMI may improve cancer survival

December 26 2019

Dr. Ganessan Kichenadasse from the Flinders Centre for Innovation in Cancer, South Australia. Credit: Flinders University

Above average or high BMI—often linked to cancers, diabetes, cardiovascular and other diseases—may in some cases improve the

chance of survival among certain cancers, new research from Flinders University indicates.

Focusing on clinical trials of atezolizumab, a common immunotherapy treatment for non-small-cell lung cancer (NSCLC), the Australian cancer researchers found improved responsiveness to the drug in those with a high body mass index (BMI).

The surprising result—published today in *JAMA Oncology* - contrast with regular warnings about the health risks of patients who are overweight and obese.

"This is an interesting outcome and it raises the potential to investigate further with other cancers and other anti-cancer drugs," says lead investigator Dr. Ganessan Kichenadasse, a medical oncology researcher at the Flinders Centre for Innovation in Cancer.

"We need to do further studies into the possible link between BMI and related inflammation, which might help to understand the mechanisms behind paradoxical response to this form of cancer treatment."

"Previous studies have explored a concept called as 'obesity paradox' where obesity is associated with increased risks for developing certain cancers and, counter-intuitively, may protect and give greater survival benefits in certain individuals.

"Our study provides new evidence to support the hypothesis that high BMI and obesity may be associated with response to immunotherapy," says Dr. Kichenadasse.

The Flinders researchers found NSCLC patients with high BMI (BMI > 25 kg/m^2) in four clinical trials had a significant reduction in mortality with atezolizumab, apparently benefiting from immune checkpoint

inhibitor (ICI) therapy.

Treatment options for this form of lung cancer are rapidly evolving and includes ICIs, molecular targeted drugs and chemotherapies.

"While our study only looked at baseline and during treatment, we believe it warrants more studies into the potentially protective role of high BMI in other cancer treatments."

The WHO estimates at least 2.8 million people die each year as a result of being overweight or obese. Overweight and obesity leads to adverse metabolic effects on blood pressure, cholesterol, triglycerides and insulin resistance. Risks of coronary heart disease, ischemic stroke and type 2 diabetes mellitus increase steadily with increasing body mass index (BMI), a measure of weight relative to height.

Of the 1434 participants studied in the Australian research, 49% were normal weight, 34% were overweight and 7% were obese.

More information: The article, 'Association between body mass index (BMI) and overall survival with immune checkpoint inhibitor therapy for advanced non-small cell lung cancer: analysis of atezolizumab clinical trials' (2019) by G Kichenadasse, JO Miners, AA Mangoni, A Rowlands, A Hopkins, MJ Sorich has been published in *JAMA Oncology* (American Medical Association) Article #COI190098.

Provided by Flinders University