

# Obesity affects breast cancer treatment

August 22 2014

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This is an image of a weight scale. Credit: CDC/Debora Cartagena

(Medical Xpress)—Obesity may affect a common drug that is used as part of the treatment to fight breast cancer in post-menopausal women.

Obesity is now defined as a global pandemic and it's predicted that more than half of the world's population will be obese by 2030. Obesity is associated with an increased risk of several cancers and poorer outcomes for cancers such as colon, endometrial and post-menopausal breast cancer.

Aromatase inhibitors stop the production of oestrogen in post-menopausal women by blocking the enzyme aromatase, which turns the hormone androgen into small amounts of oestrogen in the body. This means that less oestrogen is available to stimulate the growth of hormone-receptor-positive [breast cancer cells](#).

Aromatase inhibitors (AIs) can't stop the ovaries from making oestrogen, so [aromatase inhibitors](#) only work in [postmenopausal women](#).

There are three types of aromatase inhibitors, and each one is a pill, usually taken once a day. It's considered the best hormonal therapy to start with when treating early-stage, hormone-receptor-positive breast cancer.

"AIs may be less effective in obese women due to the greater quantity of aromatase in peripheral fatty tissue", says study author, Professor Mark Elwood, an expert in cancer epidemiology from the University of Auckland.

That was one of the conclusions from his recent systematic review of eight earlier studies to assess the effect of [obesity](#) on AI efficacy in [breast cancer treatment](#).

Studies included were interventional or observational studies with comparison groups of post-menopausal women with hormone receptor-positive breast cancer on treatment with an AI – alone or in combination with other drugs in which body mass index or another measure of obesity was used.

"Outcome measures included overall survival, disease-free survival or time to progressive disease, survival from the start of therapy, mortality measures, local or distant recurrence of primary cancer and time to recurrence," says co-author, medical oncologist, Dr David Porter. "The

systematic review showed a trend towards a negative effect of obesity on AI efficacy, but the size of the effect (in post-menopausal hormone receptor positive [breast cancer](#)), and whether it is the same with all AIs is difficult to determine."

More information is needed before clinical recommendations are made, he says.

"AIs are prescribed at a fixed dose in all patients, but the apparent decreased efficacy in heavier patients warrants investigation of whether higher doses would be more effective in [obese women](#)," says Dr Porter.

"It is important for physicians to contemplate more individualised treatment choices to limit the number of non-responders to treatment and to improve the likelihood of successful therapy for all patients," he says.

"Many questions remain unanswered in this complex scenario and information is needed before recommendations for the improved use of AIs for obese patients could or should be made," says Professor Elwood.

"Further evidence on the differing potencies of the major AIs in obesity would help clarify whether specific AIs may yield a better outcome in [obese patients](#) or whether prescribing higher doses of AIs might be useful."

Provided by University of Auckland

Citation: Obesity affects breast cancer treatment (2014, August 22) retrieved 8 May 2024 from <https://medicalxpress.com/news/2014-08-obesity-affects-breast-cancer-treatment.html>

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