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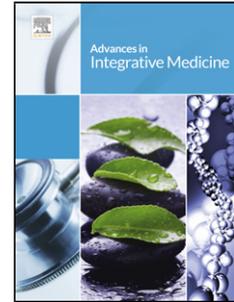
Title: Medical synopsis: Nightly Fasting may assist Breast Cancer Patients and other People with Cancer

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Synopsis

Medical synopsis: Nightly Fasting may assist Breast Cancer Patients and other People with Cancer

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The synopsis is based on the following article: Marinac CR, Nelson SH, Breen CI, Hartman SJ, Natarajan L, Pierce JP, Flatt SW, Sears DD, Patterson RE. Prolonged Nightly Fasting and Breast Cancer Prognosis. *JAMA Oncol.* 2016;2(8):11049-1055

Design A multi-site randomized clinical trial

Participants The Women's Healthy Eating and Living (WHEL) study of patients with breast cancer. Data was collected from 2413 women with breast cancer but without diabetes mellitus, aged 27 to 70 years at diagnosis. A total of 2064 participants (85.5%) were Caucasian with 1335 (55.3%) college educated.

Intervention Dietary analysis including timing of consumption at baseline, year 1 and year 4.

A 24-hour dietary recall collected by telephone on random days during a 3-week period, stratified for weekends vs weekdays.

Nightly fasting duration was estimated by calculating the elapsed hours between the first and last eating episode for each day and subtracting that time from 24 hours.

Potential confounders were identified including daily intake (kilocalories), eating episodes per day and eating after 8pm.

Comparator No comparator was used in this study.

Major Outcomes Participants reported a mean (SD) nightly fasting duration of 12.5 hours and 4.4 eating episodes per day

One third of the sample consumed 25 Kcal or more after 8pm.

A short nightly fasting duration (<13 hours per night) was significantly associated with college education, a lower BMI, shorter sleep duration, higher self-reported kilocalorie intake, more eating episodes, and eating after 8pm.

A short nightly fast (<13 hours) was significantly associated with an increased risk for breast cancer recurrence (36% higher risk).

Each 2-hour increase in nightly fasting duration was statistically significant for lower HbA1C level (0.37 mmol/mol lower) and more hours of sleep per night.

Nightly fasting was not associated with BMI or CRP concentrations.

Eating after 8pm was significantly associated with increased higher CRP and BMI.

Settings The United States of America: Clinical sites included University of California, San Diego; University of California, Davis; Stanford University; Kaiser Permanente, Northern California; M.D. Anderson Cancer Centre; Arizona Cancer Centre; and Kaiser Permanente Center for Health Research.

Conclusion Prolonged nightly fasting duration (13 hours or more), may be a simple, non-pharmacologic strategy for reducing the risk of breast cancer recurrence. In addition, improvements in gluco-regulation and sleep may be mechanisms of action linked with nightly fasting and breast cancer prognosis.

Commentary

Cancer constitutes an enormous burden on society economically, socially and psychologically. The increasing occurrence of cancer due to population growth, an aging population, an increased prevalence of established risk factors such as smoking, obesity, lack of physical activity and poor diet and more early detection has seen around 14.1 million new cancer cases and 8.2 million deaths occur in 2012, worldwide. [1]

Finding novel preventative intervention that are easy for people to incorporate into daily living and decreases the risk of cancer is imperative. For women, breast cancer is the most common cause of cancer mortality in less developed countries and second in developed countries to lung cancer [1]. Reducing the risk of occurrence and recurrence has been a primary focus for many researchers. A majority of research into breast cancer prevention and reduced recurrence has been focused on specific foods, food groups, specific diets or dietary patterns, lifestyle and physical activity. Now, a new theory is receiving attention: timing of food [2,3]

This latest study has confirmed early studies addressing nightly fasting duration and clinical outcome for breast cancer survivors. To date, only two other studies, have been published which examine the relationship between nightly fasting and breast cancer recurrence [3,4]. All three studies have reported statistical significance for prolonged nightly fasting. Marinac CR et al. (2015, 2016) are the only ones to publish on fasting and breast cancer. Their first study found that each 3-hour increase in nightly fasting was associated with a 4% lower 2-hour glucose measurement and a lowered HbA1c level in the first study [4]. The second study addressed eating frequency and timing which found that for every 10% increase in calories consumed in the evening there was a 3% increase in CRP. They also found that a longer night

time fasting duration was associated with an 8 percent lower CRP among women who ate less than 30% of their total daily calories in the evening [3].

These results, in conjunction with their latest study discussed above, shows that incorporating a longer fasting time overnight can have benefit for women with breast cancer. Although this has not been extrapolated or trialled on other types of cancer, lower inflammatory markers and increased gluco-regulation could also be of benefit for anyone trying to prevent cancer occurrence or recurrence. Moreover, nightly fasting is an easy, non-pharmaceutical intervention that anyone can incorporate. Therefore, suggesting to patients to reduce caloric intake at night, avoid eating after 8pm and fast for 13 hours or more overnight may be a beneficial consideration for those patients looking to decrease cancer risk and recurrence.

References

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