Cervical Cancer

Author : Dr. Mark Messina

Date : December 20, 2019

Expert notes soy doesn't increase risk of cervical cancer but fails to highlight that it may be proactive against this disease.

A woman who frequently consumed soy was diagnosed with cervical cancer. Upon hearing the news, the woman's mother said she knew the reason. "All the soy" in her diet "was the leading cause of all this," the mother declared.

Recently commenting on this interaction in an article in the *New York Times*, Dr. Jen Gunter, a Canadian-American gynecologist, was unequivocal. "There is no data linking cervical cancer with a vegetarian diet or soy intake."

While it is disheartening that the mother was so convinced of the dangers of soy, it is encouraging that the expert responded so convincingly that she was wrong. The above article about soy by Dr. Gunder included a link to an article by Stacy Simon dispelling concerns that soy increases risk of developing breast cancer. In fact, Ms. Simon, who is with the American Cancer Society, highlighted evidence indicating soy may reduce risk of breast cancer.

Cervical cancer is a type of cancer that occurs in the cells of the cervix — the lower part of the uterus that connects to the vagina. This year, an estimated 13,170 women in the United States will be diagnosed with invasive cervical cancer. The relationship between soy intake and cervical cancer has been studied to a limited extent. Nonetheless, as highlighted below, the evidence that does exist is quite intriguing.

In 2010, Japanese researchers published a case-control study involving 333 women with invasive carcinomas and 72 with cervical intraepithelial neoplasias grade III and 2,025 age-matched non-cancer controls.[1] After adjustment for smoking status, alcohol, gravidity, oral contraceptive use, vitamin supplement usage and energy intake, when comparing tofu intake >5times per week with no tofu consumption, the odds ratio for invasive cancer and intraepithelial neoplasia were 0.64 and 0.55, respectively. Although both values are supportive of a protective effect of soy, neither finding was statistically significant. Three years later, a very small (33 cases, 132 controls) case-control study from China found bean intake was inversely related to cervical cancer risk (odds ratio, 0.687) when comparing almost daily intake with infrequent intake.[2] Bean intake in China tends to represent soy intake. However, once again the finding was not statistically significant.

The two observational studies cited above suggest soy intake *may* be protective against cervical cancer. It is, however, this next study that really helps make the case.[3] This study involved 30,744

Chinese women in Singapore who were followed for an average of 16.7 years during which time there were 312 incident cervical cancer cases. The women in this study were divided into three soy intake groups: low, medium and high. High intake of soy was associated with a borderline statistically significant 20% reduced risk of cervical cancer (hazard ratio, 0.80).

Unlike soy, there was no evidence that green tea consumption alone was protective among the Singaporean women. However, when the researchers looked at whether green tea consumption impacted the effect of soy, they found that high intake of soy was associated with a statistically significant decrease in cervical cancer risk among green tea drinkers (hazard ratio, 0.43) but not among non-drinkers of green tea. The difference in the soy-cervical cancer risk association between green tea drinkers and non-drinkers was statistically significant (p for interaction = 0.004).

This Singaporean study is especially noteworthy for its prospective design and long follow up. It also highlights an interaction between green tea and soy. Given all the misinformation that exists online about soy, it is reassuring to know that the *New York Times* correctly noted that soy does not increase risk of cervical cancer. Perhaps if this issue comes up again, Dr. Gunter will note evidence suggesting that soyfoods may protect against this disease.

References

1. Hosono S, Matsuo K, Kajiyama H, et al. Association between dietary calcium and vitamin D intake and cervical carcinogenesis among Japanese women. *Eur J Clin Nutr*. 2010;64(4):400-9.
2. Zhang B, Zhou AF, Zhu CC, et al. Risk factors for cervical cancer in rural areas of Wuhan China: a matched case-control study. *Asian Pacific journal of cancer prevention : APJCP*. 2013;14(12):7595-600.
3. Paul P, Koh WP, Jin A, et al. Soy and tea intake on cervical cancer risk: the Singapore Chinese Health Study. *Cancer Causes Control*. 2019;30(8):847-57.