Preventing needless suffering: When to use chemo for ovarian cancer?

By ACSH Staff — June 17, 2015

The field of personalized medicine continues to explode. We have discussed the nascent approach of tailoring cancer treatments to specific gene mutations rather than the type of cancer. Although results have been mixed, many researchers believe that this is the future of cancer therapy, replacing the traditional scattershot approach.

Two of the most notable examples of the personalization of cancer treatment both involve breast cancer. Although the impact of mutation of the BRCA1 and BRCA2 on the development of breast and ovarian cancers has been known for some time, there is now significant public awareness of the severity of this condition following the revelation that Angelina Jolie was afflicted with one of these mutations, which prompted her to have prophylactic surgical procedures to remove both her breasts and ovaries.

Another example of guiding cancer care by looking for specific genes is the proper use of Herceptin, an antibody that is effective only in women who have HER2-positive breast cancers, but not in women who have other types.

This same concept is being applied to ovarian cancer, but in this case it has not identified an improved treatment for this very deadly cancer. Instead, researchers at MD Anderson in Houston have identified which subtypes of ovarian cancer will be receptive to chemotherapy and which will not.

Lead author, Luexin Liu, PhD, assistant professor of pathology writing in JAMA Oncology, describes a family of genes called ADAMTS. Although mutations in ADAMTS and BRCA genes both play a part in the development of ovarian cancer, Liu’s group demonstrated that the genes act independently of each other. And the ADAMTS gene mutations determine the susceptibility of the cancer to platinum-based chemotherapy.
Dr. Liu explains, “The study’s findings are exciting because early identification and differentiation of patients with chemotherapy-resistant disease could allow enrollment in clinical trials with alternative therapeutics rather than ineffective chemotherapy.”

In other words, why subject women who are already suffering from one of the most deadly forms of cancer to one of the worst chemo regimens?

ACSH’s Dr. Josh Bloom explains, Chemo regimens can be classified in terms of emetogenicity [1] the degree of vomiting that the drug(s) produce. This ranges from minimal risk (less than 10 percent chance of vomiting without the use of an antiemetic drug) to high risk (greater than 90 percent). Platinum-based chemo, generally used for ovarian cancer, are among the worst ranging from moderate (30-90 percent) to high. This is not the kind of chemo that is benign and leaves you feeling OK. It is the opposite. No one would ever want to suffer through this rather brutal regimen if they knew in advance that it wouldn’t work.

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