Why radiate a perfectly good brain? Dr. Vivek Mehta, radiation oncologist, discusses the possible role for prophylactic cranial irradiation (PCI) for extensive stage small cell lung cancer (SCLC) to decrease risk of brain metastases and improve survival.

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Transcript

Small cell carcinoma comes in two flavors — one is limited stage disease in the chest, and the other is extensive stage disease. Extensive stage disease means that the cancer has spread
to multiple parts of the body, outside of the chest — sometimes that’s the bone, the liver, adrenal glands, or other parts of the body. When you have extensive stage disease, you’re often treated with chemotherapy; sometimes in the setting of extensive stage disease, the cancer completely responds to the treatment and practically goes away. In that setting, we often look to see if the cancer has spread to the brain. If there’s no evidence of spread to the brain, and you had a very nice response to systemic chemotherapy, some people will celebrate — but a lot of people will say that there’s still a risk that the cancer could come back in the brain because, unfortunately, small cell carcinoma has a predilection to get back into the brain, and the chemotherapy, the mainstay of treatment so far, has a tendency to not get to the brain with any sort of meaningful effect.

Now, what to do about that risk that we know exists, is a little bit in controversy. There has been some work suggesting that, in this group of patients that has responded so nicely to chemotherapy, we should be offering them prophylactic cranial irradiation. We offer prophylactic cranial irradiation to patients with limited stage disease — just as a review, prophylactic cranial irradiation really means a low dose of radiation delivered to the whole brain. It’s a lower dose of radiation than you would give somebody that has brain metastasis, and the whole purpose of that lower dose of radiation is simply to reduce any microscopic cells that might be in the brain. Other people think that, because you have extensive stage disease, your risk of the disease coming back elsewhere in the body, even with a dramatic response like that, is going to dwarf any potential benefit of this prophylactic cranial irradiation. It’s certainly an area for discussion — it’s certainly an area for more research. Our personal bias here has been to look at each patient as an individual, and to assess whether or not they would benefit. We tend to take the patients that are younger, more robust, more healthy, and had the best response to treatment, and offer them prophylactic cranial irradiation.