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Early childhood neglect may raise risk of adult skin cancer

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Skin cancer patients whose childhood included periods of neglect or maltreatment are at a much greater risk for their cancers to return when they face a major stressful event, based on a new study.

The research suggests that such experiences during a person's youth can set a lower level of immune response for life, which in turn might make them more susceptible to the kind of cancers that are often successfully fought by the immune system, so-called immunogenic tumors.

While the research focused on patients with a fairly benign form of skin cancer—basal cell carcinoma (BCC)—the findings appear as a warning for patients to be more vigilant in concerns over their health for the rest of their lives.

The study appears in the June 4, 2012, issue of the journal Archives of General Psychiatry and is the latest in three decades of research linking stress and immunity that have been led by investigators at Ohio State University's Institute for Behavioral Medicine Research (IBMR).

"This is the first study to show that troubled early parental experiences, in combination with a severe life event in the past year, predict local immune responses to a BCC tumor," wrote Christopher Fagundes, first author of the paper and a postdoctoral fellow at the IBMR.

"This expands the growing evidence that the consequences of early parental experiences extend well beyond childhood."

Basal cell tumors are considered the most common form of skin cancer, and much less dangerous than squamous cell carcinomas or melanomas. And their frequency is on the rise, the number having doubled in the United States every 14 years. Nearly half of all BCC patients will have an additional tumor form within three years of their first.

The researchers looked at 91 men and women who previously had a BCC. Each of the participants were given a battery of surveys and interviews, some of which gauged their past relationship with their parents as children. From this, the researchers could measure the degree of neglect or maltreatment the patients had experienced as children.

Tissue from each participant's tumors was also analyzed and tested for the presence of four types of messenger RNA, markers that measured the intensity of the person's immune response to their tumor.

The results showed that BCC patients who had a severe, stressful life event in the last year, and who experienced neglect or maltreatment from their mothers as children, had a substantial drop in their immune response to the tumors.

"Those in the top 25 percent of maltreatment by their mothers saw a 350 percent reduction in immunity compared to those in the bottom 25 percent of maltreatment," Fagundes explained.

Maltreatment or neglect from the father showed a 140 percent drop in immunity when the top 25 percent were compared to the bottom 25 percent, he said.

"We're not talking about abuse here," he explained. "And the effects were similar regardless of whether the harm came from the mother or father."

Jan Kiecolt-Glaser, co-author of the paper and a professor of psychiatry and psychology at Ohio State, said, "This means that for people who have had an early history of vulnerability and who are currently going through a stressful period, they have another reason to watch their health and be especially vigilant."

The findings are likely to be significant beyond just their role with BCC patients, said Ron Glaser, another co-author and director of the IBMR. Glaser, a professor of molecular virology, immunology and medical genetics, pointed to other immunogenic cancers that might be affected.

"If the immune system is down-regulated, it will affect a person's ability to deal with that tumor," he said. "Some examples of other immunogenic tumors include ovarian cancer, head and neck cancers, melanoma, some lymphomas and tumors induced by cancer viruses, and renal cell tumors."

The researchers hope to continue the work and determine what mechanisms are responsible for the continued lower immune response.

Provided by Ohio State University Medical Center