

Stress may make cancer cells resist treatment

Stress hormone epinephrine causes changes in prostate and breast cancer cells that may make them resistant to cell death, says a new study.

'This data implies that emotional stress may contribute to the development of cancer and may also reduce the effectiveness of cancer treatments,' said George Kulik, a scientist from the Wake Forest University in the US.

Levels of epinephrine, which is produced by the adrenal glands, are sharply increased in response to stressful situations and can remain continuously elevated during persistent stress and depression, according to previous research.

The goal of the current study - reported in the online Journal of Biological Chemistry - was to determine whether there is a direct link between stress hormones and changes in cancer cells.

Studying prostate and breast cancer cells in the laboratory, Kulik and colleagues found that a protein called BAD - which causes cell death - becomes inactive when cancer cells are exposed to epinephrine.

Kulik said the findings have several implications for patients and for researchers. 'It may be important for patients who have increased responses to stress to learn to manage the effects,' said Kulik.

'The results point to the possibility of developing an intervention to block the effects of epinephrine,' he added.

Kulik is now studying blood samples of prostate cancer patients to determine if there is a link between levels of stress hormones and severity of disease and has also begun studying the effects of epinephrine in mice with prostate cancer.

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