Medical Xpress

Drug/radiation combo may help shrink established tumors

August 25 2008

Researchers may be closer to understanding why anti-cancer drugs such as Ipilimumab, which boost the tumor-killing power of immune cells, haven't fared well in clinical trials. The new study, which describes a way to enhance the ability of these drugs to shrink well-established tumors, will be published online on August 25th in the *Journal of Experimental Medicine*.

The immune system's tumor-fighting T cells work best when maximally activated. Scientists have achieved this by blocking molecules that dampen the cells' activation, or by removing a population of regulatory T cells that block the killing ability of tumor-specific T cells. But neither approach has worked well in patients with established tumors.

Combining these two approaches in mice, the new study shows, caused small tumors to shrink but had no effect on large tumors. This finding suggested that some quality of large tumors makes them resistant to T cell killing.

Indeed, the blood vessels around large tumors lacked proteins required for killer T cells to crawl out of the circulation and into the tumor. Combining the T cell-boosting treatment with radiation therapy—which has been shown to increase the expression of these vessel proteins—was effective in shrinking large tumors. It remains to be seen whether combining radiation therapy with T cell-boosting drugs will be effective in humans.

Source: Journal of Experimental Medicine