Morphine blocks tumor growth

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Minneapolis, MN Current research suggests that taking morphine can block new blood vessel and tumor growth. The related report by Koodie et al, "Morphine suppresses tumor angiogenesis through a HIF1α/p38MAPK pathway," appears in the August 2010 issue of the *American Journal of Pathology*.

Morphine is currently the gold standard of analgesics used to relieve severe pain and suffering. Angiogenesis, or new blood vessel growth, is critical for tumor progression from dormant to malignant. Morphine is commonly used to treat cancer pain, but the effects of morphine use on new blood vessel and tumor growth remain controversial.

Using a clinically relevant morphine dose in a mouse model of Lewis lung carcinoma, researchers led by Dr. Sabita Roy of the University of Minnesota Medical School in Minneapolis, MN examined the effect of morphine use on new blood vessel growth in tumors. They found that chronic morphine use decreased levels of tumor angiogenesis in a manner dependent on the opioid receptor. This effect was mediated by suppression of signaling induced by low oxygen concentrations, leading to a reduction in the levels of pro-angiogenic factors. Therefore, morphine may not only serve as an analgesic for cancer patients, but may also inhibit tumor angiogenesis and growth.

Koodie et al conclude that "morphine is a potential inhibitor of tumor growth, through the suppression of tumor cell-induced angiogenesis and hypoxia-induced p38 MAPK activation of HIF-1. In addition to its analgesic potential, morphine can be exploited for its anti-angiogenic potential in cancer pain management; these findings support the use of morphine for cancer pain management."

SOURCE [1]

Links:
[1] http://www.eurekalert.org/pub_releases/2010-07/ajop-mbt072710.php