The Medical Xchange
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Anti-Inflammatory Agents May Reduce Glioma Risk

Montreal - The concept of chemoprevention suggests cancer or its progression may be prevented through administration of drugs or consumption of certain foods or phytochemicals. An award-winning study at this year's SNO meeting determined that chemoprevention of brain tumours may be possible with statins and NSAIDS.

There is rapidly expanding interest in preventing cancer or its progression in individuals at risk - or even in the general population - through administration of drugs or consumption of certain foods or phytochemicals.

As part of this line of inquiry, some researchers are focusing on the role of inflammation in cancer development – especially, attempting to clarify the likely numerous mechanisms by which inflammation may promote tumour development or persistence, and the potential for medications that reduce inflammation to reduce cancer risk. Acetylsalicylic acid (aspirin) and other non-steroidal anti-inflammatory drugs (NSAIDs), for example, have been shown in numerous studies to reduce the risk of colorectal and possibly other cancers, although candidate selection and optimal dosing require further study. Anti-inflammatory mechanisms also may explain some of the beneficial effects of the statin class of medications.

Pilot Study

Presented at this year's SNO meeting, according to a pilot case-control by Dr. Rose Lai et al. from Columbia University, New York and the University of California, San Francisco, chemoprevention of devastating brain tumours with medication with anti-inflammatory and/or immunomodulatory effects may be achievable.

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Through evaluation of 200 cases and 400 controls, the researchers determined that taking a statin for more than 6 months reduced the risk of a malignant glioma by 20% (OR = 0.8, 95% CI 0.6, 1.1). The most notable effect was seen with simvastatin, which crosses the blood-brain barrier most effectively than other statins: it led to a significant 50% reduction in risk (OR = 0.5, 95% CI 0.3, 0.8). Increasing the duration of use had a stronger protective effect (trend test $P < 0.01$).

In a separate but related study, the investigators found that use of NSAIDs for more 6 months reduced the risk of glioma by 50% (OR = 0.5, 95% CI 0.4, 0.7).

Further Steps

Confirming these findings, as well as determining how these medications might be chemopreventive and which individuals might benefit from their use requires additional research efforts. Dr. Lai et al. plan to explore whether genetic polymorphisms of genes in the HMG-CoA reductase pathway, Rho and Ras GTPases, may be modifying factors for statin therapy. Eventually, their investigation strategy may lead to the selection of those individuals with the right genetic profiles as chemoprevention candidates. ●