Immunome Research

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Aspirin and Melanoma

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Aspirin is known to provide a variety of health benefits including pain relief, heart attack prevention, and possible prevention of several forms of cancer including colon, breast, esophagus, stomach, prostate, bladder, ovary and the deadliest form of skin cancer-melanoma. In the largest study to date aimed to explore melanoma prevention, researchers at Stanford University found a significant association between frequent use of aspirin and melanoma, where aspirin users were less likely to develop melanoma compared to those who did not take aspirin. Results also showed that the longer individuals took aspirin, the lower their risk of developing skin cancer.

Melanoma is a less frequently occurring form of skin cancer compared to other varieties, however is it most fatal if not found early, accounting approximately 75% of all deaths related to skin cancer. Inflammation plays a major role in the development of cancer, and it is speculated that aspirin may prevent melanoma is through its anti-inflammatory effects. There are several hypotheses regarding the action of aspirin in melanoma prevention. Scientists speculate that aspirin prevents cancer by inhibiting the Cox-2 gene, which controls inflammation, while other investigators hypothesize that aspirin reduce the incidence of cancer by inhibiting platelets, which when activated release factors that encourage cancer growth and development. While non-aspirin NSAIDs also reduce inflammation, they don't utilize the same pathways that aspirin uses for activation in the body. This difference is thought to be the key to aspirin's effectiveness.

The most current study examined data collected from approximately 60,000 post-menopausal Caucasian women who participated in self reporting on life style factors such as sun exposure and drug use for an average of 12 years. Only Caucasian women were studied, as melanoma risk increases in people with less skin pigment. Women were divided into categories depending on whether they reported taking aspirin, a different NSAID, or nothing. During the study period, 548 participants were diagnosed with melanomas. Based on data, women who took aspirin on a regular basis (at least twice weekly) appeared to have their risk of developing melanoma by 20%. Women who took aspirin regularly for five years or ore had their risk of melanoma development reduced by 30%.

While opinion is split on whether evidence is strong enough to encourage the use of aspirin regularly, the results from this study strongly suggest that aspirin has potential anti-cancer properties, adding to aspirin's protective effects against several other diseases. At this point, lack of understanding regarding the action of aspirin as an anti-tumor agent is a restraint against its use as an anti-cancer drug. Stronger evidence is needed from clinical trials to examine aspirin against a placebo for cancer risk prevention rather than a long term observational study; however these results provide great insight into aspirin's promise as a cancer prevention drug.

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