Impact of aspirin on colorectal cancer prognosis

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The Editor, Colon Cancer (CRC) is the third most common cancer in the world, with a prevalence of 1.9 million cases worldwide.[1] Pakistan is also one of the countries with CRC's rapidly increasing rate; however, no measures have been taken to measure CRC's statistical disease burden in Pakistan. CRC alone has contributed to 0.9 million deaths worldwide.[1] This establishes the requirement of more structured treatment plans that are easily available and cost-effective in countries like Pakistan, with limited financial means and constrained resources.

The current treatment modalities involve surgical removal in resectable tumours, and chemotherapy, radiotherapy, either isolated or in conjunction, for non-resectable cases.[2] However, research has displayed that adding aspirin as an adjuvant therapy has significantly improved the result outcome.[3,4] Aspirin is an irreversible, non-selective inhibitor of both COX1 and COX2 enzymes, which is classified as a prominent non-steroidal anti-inflammatory drug (NSAID) with economical drug cost, viable for low-income countries like Pakistan.

Studies have highlighted that one of the causes that plays a pivotal role in (CRC) inflammation-associated tumour-igenesis is the promotion of epithelial and DCLK-1+ (doublecortin–like kinase 1) cell derived COX-1.[1] Moreover, prostaglandins (particularly PGE2) and phospho–AKT are also prominent inflammatory mediators that upregulated inflammation-associated colonic dysplasia.[1]

However, inhibition of prostaglandins synthesis and COX1 inhibition using low doses of aspirin (75 to 300 mg)[5] has been shown to significantly reduce tumour number in CRC patients.[1] These results best correspond to COX-1 inhibition instead of COX-2 selective inhibition. While these selective COX-2 inhibitors, like celecoxib or rofecoxib could affect tumour number, studies suggest high incidence of acute mortality in experimental studies. Hence making aspirin as a safer option to administered as compared to other selective COX inhibitors.[1]

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Aspirin in addition to reducing tumour number in CRC also results in irreversible inactivation of platelets circulating in the blood, suggestive of platelets inactivation as a link to drug's anti-cancerous activity.[5]

The only major concern while recommending aspirin is the GI related side effects and intestinal bleeding, which expected in 0.07 to 0.1% of the patients taking it.[5] Although these concerns can occur, the risk of serious bleeding is quite low.

Conclusively, the benefit /risk ratio prefers the use of aspirin in CRC associated cancer patients of less than 70 years of age. This not only becomes a means for decreasing morbidity and mortality among CRC patients, but is also cost –effective and affordable in developing countries like Pakistan. Hence, we urge healthcare workers and public health bodies to opt for this strategy. Moreover, further research and clinical trials are crucial to gain more accurate knowledge on this drug's future indications in the field of oncology.

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