S39. Toxicity and long-term problems with Aspirin and NSAID's: The problem

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Aspirin and other NSAIDs traditionally have been widely used for the relief of musculoskeletal aches and pains, headaches, and more serious rheumatological indications. In the 1980s and afterwards, experimental data and epidemiology observations suggested that they would be effective chemoprevention agents. However, concern about gastrointestinal toxicity tempered early enthusiasm about usage. The development of cox-2 selective inhibitors that promised reduced gastrointestinal toxicity led to many clinical trials for potential chemoprevention of colon and other cancers. Although a decrease in polyp burden (in FAP) and a reduction in the number of sporadic adenomas in at-risk individuals was demonstrated, a largely unexpected increase in serious cardiovascular and cerebrovascular toxicities was unmasked that was dose-response related and nearly caused collapse of the Cox-2 selective industry and branded (unjustifiably) all NSAIDs, except perhaps Aspirin, as unsafe. A major problem in assessing the relative toxicity of various NSAIDs is the most studies are retrospective and dose is frequently ignored. Strikingly, recent assessments of overall outcomes following usage of prophylactic Aspirin for vascular protections suggests that the risk-benefit ratio for 81 mg Aspirin daily is clear while a dose of 325 mg Aspirin daily over the long-term may not be. Two major questions need to be addressed before we can move forward and able to use NSAIDs for chemoprevention in a logical manner: 1. What is the pro-coagulant/anti-coagulant profile of Aspirin and other NSAIDs at a variety of doses? 2. Can large databases (eg Medicare, VA) sort out relative GI and cardiovascular toxicities of the major NSAIDs and inform us in a useful way? Until these questions can be answered, future chemoprevention studies of NSAIDs should probably be confined to individuals at higher risk of cancer. Strategies fro moving Aspirin and NSAIDs forward as potential chemoprevention compounds will be discussed, including the value of dose de-escalation studies and combination trials.