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### **Data analysis suggests early relapse in breast cancer is an inflammation driven process after primary surgery and may be reduced by perioperative NSAID analgesic**

Most relapses in breast cancer occur 1-3 years after surgery to remove the primary tumor. My colleagues and I have been studying the early relapse effect. We have determined that there is a bimodal relapse pattern after primary surgery in early stage breast cancer that has now been identified in 20 independent databases from US, Asia and Europe. Analysis of these data using computer simulation suggests that the early relapses are the result of tumor growth accelerated or initiated by something related to surgery. This single hypothesis explains a number of previously unconnected clinical observations. Late relapses are apparently not correlated with the time of surgery. Recently published retrospective data show a five-fold reduction in early relapses with use of perioperative analgesic NSAID ketololac. This needs to be prospectively tested to confirm this potentially important observation. This low cost and non-toxic intervention would be an ideal solution to the early relapse problem in breast and perhaps other cancers as well. We suspect transient systemic inflammation after surgery facilitates early relapses by inducing angiogenesis and that capillary leakage in presence of circulating tumor cells initiates cellular growth. High priority should be given to test this hypothesis in a randomized trial as it is implementable regardless of state of socio-economic development because expensive drugs, modern imaging facilities and advanced pathology services are not particularly relevant to implementing this simple change. Triple negative breast cancer may be the subgroup that shows the most benefit.

#### **Biography**

Michael Retsky, Ph.D in Physics from University of Chicago made a career change into cancer research in 1982 becoming Biology Professor at the University of Colorado. He was on Judah Folkman's staff for 12 years at Harvard Medical School. A long-term survivor of stage IIIc colon cancer, he was the first person to use what is now called metronomic chemotherapy. He is on the board of directors of Colon Cancer Alliance and has published over 50 papers in physics and cancer journals. He has been guest editor of several journals.

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