Analysis of the Recent Guidelines for Mammographic Screening

If there is no survival difference by screening yearly in a younger population that has more aggressive cancers, maybe they are being detected **too late** and screening should be done **MORE** frequently not abandoned.

It is common knowledge that there is essentially a 60/40 rule in the distribution of patients with breast cancer. That is that in the women under fifty that approximately 60% of patients have aggressive tumors while 40% do not, and vice versa for the older population 60% non-aggressive and 40% aggressive.

The observation is clear that using a screening model that does not take that into account would demonstrate statistically a Type II error. Meaning that in the younger population the tests would be negative when the disease was present (false negative) and by the time the next screening event arose the test was positive and the disease was out of control resulting in poor survival in at least 60% of the population. Whereas, the older population would have that scenario occur in only 40% of the screened population and thus create the type II statistical error seen in the analysis.

The panel however, focused on the Type I errors or the false positive test results as the focus of their attention of causing undo concern and over testing while avoiding the whole issue of the Type II error in the data or the inability of the screening test or its frequency to detect the disease at a treatable state.

In short the screening test and its current frequency will potentially save 40% of the patients under age 50 but we are going to consign them to the "lost souls" since the statistics affecting the 60% overshadow their benefit.

 Perhaps the answer lays in the frequency of screening or the modality of screening for the patients younger than 50. Since the peak incidence of fibrocystic change is at age 47 it would make sense that the most difficult mammography detection would be between 40 and 50 making it most difficult to detect the lesions in that subset and thus increasing the Type I (false negative) error rate. No study to look at that has ever been conducted in a large (statistically significant) population of patients under 50 to answer the question? In the Asian population small dense breasts are the norm (akin to our under age 50 population of patients) and mammography is not sensitive nor specific thus MRI has been shown to have much better sensitivity in this population for the detection of cancers. To propose MRI screening in patients younger than 50 would be anathema since cost is prohibitive, but raises the issue that it may just be the screening modality that is at fault of non-detection at an earlier stage in this group. Further, as argued above if 60% of the population being screened has faster growing tumors maybe every six month screening in the 40-50 year age bracket would improve detection and survival.

Nihilism works wonders to save money just ask the British. Indeed, just ask the 49 year old patient I treated last week from the UK who had palpable adenopathy and was put in the que for an MRI in six weeks. The british have a diagnostic biopsy rate of detection of > 95%. (ours 22%) they only biopsy lesions that have **grown on mammograghy**.

The other side of this is Tort reform. With the most litigious area of radiology being mammography this will now be a field day for the legal profession. I am sure they would be very supportive of these

guidelines. The standard will be survival of the cohort not the survival of the patient. Who is going to set the legal precedent for that in case law?

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