

Tumour markers and screening for Cancer

Screening and early diagnosis of cancer have intuitive appeal to anyone that has dealt with patients with incurable cancer. Screening tests include fecal occult blood, mammography, cervical Pap smears and blood tumour markers. Blood tests for numerous tumour markers are commercially available and their use has recently been comprehensively reviewed .

The ease of obtaining a sample and the spectrum of organ related tumour markers available to the clinician, has led to a surge in tumour marker usage that may be inappropriate.

The only blood tumour marker that is accepted by most authorities to have any role in screening for malignancy is the PSA test. This is however not accepted without controversy and Law even states, "...the one certainty about prostate specific antigen testing is that it causes harm."

The role of tumour markers such as CA 15-3, CA19-9, CA125, CEA etc. for cancer screening are even more tenuous. By way of a specific example, CA15-3 is touted by some as a "test for breast cancer" and has the following performance characteristics : "... 5.5% of 1050 normal subjects.....23% of patients with primary breast cancer.....69% with metastatic breast cancer.....other malignancies, including pancreatic (80%)....benign breast diseases (16%)...should not be used to diagnose primary breast cancer...most useful in monitoring therapy and disease progression...."

It is generally accepted that , with the exception of PSA, none of the other blood tumour markers has any role in the screening, or diagnosis of malignancy. An additional factor to consider is the potential harm inflicted on patients by false reassurance (77% of primary breast cancer will be missed by CA15-3) and the emotional distress as well as unnecessary further testing on 5.5% of patients without any malignancy (false positives). This scenario holds true for any of the other blood tumour markers mentioned above.

In conclusion there is no evidence to support the routine use of blood tumour markers as a screening or diagnostic aid. The inappropriate use of blood tumour markers must be actively discouraged.

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