MRI versus mammography for breast cancer screening in women with familial risk (FaMRIsc)

Sepideh Saadatmand and colleagues[1] present the early results of the FaMRIsc study, wherein they compare the outcomes of breast cancer screening with MRI (in 674 women) and with mammography (in 680 women) in a randomised trial. This study is very important because it opens a window into studying the benefit of breast cancer screening per se. If, on one hand, mortality in the MRI group ultimately proves to be lower than that in the mammography group, this finding will provide strong and valuable evidence that early detection saves lives. If, on the other hand, the mortality is the same in both groups, despite a large excess of small screen-detected cancers in the MRI group, the outcome will call into question the basic practice of screening. This scenario could be the case if, for example, all the excess cancers in the MRI group were due to overdiagnosis—if so, one would expect to see a big increase in incidence associated with MRI, and a decline in the case-fatality rate, but no difference in breast cancer mortality. The early results show a huge excess of cancers in the MRI group (40 *vs* 15), including many more cases of ductal carcinoma in situ (16 *vs* 7). It is not clear if finding ductal carcinoma in situ is a benefit of screening, given the absence of evidence that detecting the early cancer leads to a downstream reduction in advanced breast cancers (or deaths). In an enthusiastic editorial Christiane Kuhl[2] downplays the possibility that this disparity is primarily the consequence of overdiagnosis and she comes close to promising us that this will lead to lives saved. My sense is different, the discrepancy in the number of incident cases is enormous (40 *vs* 15) and brings to mind overdiagnosis. If overdiagnosis is not happening, then after a certain period of time, the incidence of breast cancer in the two groups should equilibrate. After five screening rounds, the incidence in the MRI group is still over twice that in the mammography group (6·3 per 1000 screens *vs* 2·7). Also, four node-positive cancers were present in one group and five in the other other. If, as I suspect, the overdiagnosis hypothesis is correct, then no decline in breast cancer deaths should be seen 10 years down the line. I would be delighted to be proven wrong. Either way, I anticipate the mortality results with great interest.

I declare no competing interests.

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1 Saadatmand S, Geuzinge HA, Rutgers EJT, et al. MRI versus mammography for breast cancer screening in women with familial risk (FaMRIsc): a multicentre, randomised, controlled trial. *Lancet Oncol* 2019; published online June 17. http://dx.doi.org/10.1016/S1470-2045(19)30275-X.

2 Kuhl CK. Underdiagnosis is the main challenge in breast cancer screening. *Lancet Oncol* 2019; published online June 17. http://dx.doi.org/10.1016/S1470-2045(19)30314-6.