This study based in The Netherlands was presented to the San Antonio Breast Cancer Symposium, December 2014. The purpose of the study was to assess the potential benefits to patients undergoing pre-operative MRI in breast cancer. The Netherlands Cancer Registry formed the basis of the study including women with invasive breast cancers or DCIS, diagnosed between 2011 and 2013. Various subgroups were studied including invasive cancer, high grade DCIS, non palpable cancer, patients aged 40 or less and finally, invasive lobular cancer. The study assessed the association of pre-operative MRI usage with the initial decision to perform mastectomy, the margins of resection after breast conservation surgery (BCS), and also with the rate of re-excision required after BCS.

5514 women were included in the study. Positive resection margins were found in 18.1% of women who had MRI and 15.1% of those who did not, with no difference in the subgroups. The re-excision rate was 9.8% in the MRI group and 7.2% in the group of patients who did not undergo MRI, with no differences in the subgroups. In studying the MRI group, it was found that 38.8% of the patients finally underwent mastectomy, compared with 24.2% in patients who did not undergo MRI, and this difference was not found for patients under 40 years old, neither in those with invasive lobular cancer.

The authors suggested that there was no particular subgroup identified which would benefit from pre-operative MRI concerning the risk of margin involvement or the re-excision rate. MRI was associated with more extensive surgical procedures except in those under 40 years old and also in those who had invasive lobular cancer. The authors suggest that widespread use of pre-operative MRI should be discouraged, and that MRI should have a selective basis only.

Dr Currer’s comment:
The strength of the study is the large number of patients, and its multicentre origin. The weakness of the study relates to the retrospective nature of the investigation. The retrospective aspect would explain the high incidence of MRI in patients ultimately undergoing mastectomy. This is due to patient selection, patients with larger tumours being more likely to have a DCIS component adjacent to the main tumour, leading to a greater risk of incomplete resection, and hence indicating pre-operative MRI ultimately leading to a mastectomy.

There are excellent studies which suggest there is a benefit in pre-operative MRI, and in that the further management surgically is altered, having performed an MRI on these...
MRI has been available for our breast cancer patients for 20 years and it is only in the last decade that the indications for its usage have become more clearly defined. I believe that the time will come when MRI will be recommended in all breast cancer patients pre-operatively to assess for any additional cancers in either breast not shown on mammography and sonography.