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MRI may cause more harm than good in newly diagnosed early breast cancer

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A new review says using magnetic resonance imaging (MRI) before surgery to assess the extent of early breast cancer has not been shown to improve surgical planning, reduce follow-up surgery, or reduce the risk of local recurrences. The review, appearing early online in *CA: A Cancer Journal for Clinicians,* says evidence shows that MRI increases the chances of more extensive surgery over conservative approaches, with no evidence that it improves surgical care or prognosis.

Randomized controlled trials have shown women with early stage breast cancer who are treated with breast-conservation therapy (local excision and radiotherapy) have the same survival rates as those who undergo mastectomy. Recently, MRI has been introduced in preoperative staging of the affected breast in women with newly diagnosed breast cancer because it detects additional areas of cancer that do not show up on conventional imaging.

In the current review, Nehmat Houssami, MBBS, Ph.D., of the University of Sydney, Australia, and Daniel F. Hayes, M.D., of University of Michigan Comprehensive Cancer Center, Ann Arbor, Mich., reviewed available data on preoperative MRI's detection capability and its impact on treatment. The use of preoperative MRI scans in women with early stage breast cancer has been based on assumptions that MRI's detection capability in this setting will improve surgical treatment by improving surgical planning, potentially leading to a reduction in re-excision surgery, and by guiding surgeons to remove additional disease detected by MRI and potentially reducing recurrence

in the treated breast. The authors say emerging data show that this approach to local staging of the breast leads to more women being treated with mastectomy without evidence of improvement in surgical outcomes or long-term prognosis.

After reviewing the data, the authors conclude that there is evidence that MRI changes surgical management, generally from breast conservation to more radical surgery, but that there is no evidence that it improves surgical treatment or outcomes. "Overall, there is growing evidence that MRI does not improve surgical care, and it could be argued that it has a potentially harmful effect," conclude the authors. They say well-designed, randomized controlled trials are needed to quantify potential benefit and harm, including careful evaluation of its impact on quality of life. "We acknowledge that logistics and costs of conducting such large-scale, multicenter trials are enormous. If the technology is truly as beneficial as its proponents claim, then these costs are worth it. If it is not, then they are outweighed by the costs of adopting expensive technology and associated intervention without evidence of clinical benefit," they conclude.

More information: "Review of Preoperative Magnetic Resonance Imaging (MRI) in Breast Cancer," Nehmat Houssami, MBBS, PhD, and Daniel F. Hayes, MD, CA Cancer J Clin Published Online: August 13, 2009 (doi:10.3322/caac.20028); Print Issue Date: September/October 2009.

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