



ORIGINAL REPORT

Is the performance of MRI in preoperative staging of breast cancer independent of clinical and histological factors? A subgroup analysis[☆]



C. Carreira Gómez^{a,*}, J. Zamora Romero^b, A. Gil de Miguel^c, M. Chiva de Agustín^d, M.N. Plana Farrás^b, J. Martínez González^a

^a Servicio de Diagnóstico por Imagen, Hospital Universitario de Fuenlabrada, Fuenlabrada, Madrid, Spain

^b Unidad de Bioestadística Clínica, Hospital Universitario Ramón y Cajal, Madrid, Spain

^c Departamento de Medicina Preventiva y Salud Pública, Universidad Rey Juan Carlos, Alcorcón, Madrid, Spain

^d Servicio de Radiodiagnóstico, Hospital Ramón y Cajal, Madrid, Spain

Received 3 July 2013; accepted 27 January 2014

KEYWORDS

Breast cancer;
Magnetic resonance
imaging;
Tumor staging;
Breast density;
Intraductal
carcinoma

Abstract

Objective: To determine whether preoperative breast MRI is more useful in patients according to their breast density, age, menopausal status, and biopsy findings of carcinoma in situ.

Material and methods: We retrospectively studied 264 patients treated for breast cancer who had undergone mammography, ultrasonography, and MRI. We compared the size of the tumor on the three techniques and the sensitivity of the techniques for detecting additional lesions both in the overall group and in subgroups of patients classified according to their breast density, age, menopausal status, and histological findings of intraductal carcinoma. The definitive histological diagnosis was used as the gold standard.

Results: MRI was the technique that was most concordant with the histological findings for the size of the lesion, and it was also the technique that detected the most additional lesions. With MRI, we observed no differences in lesion size between the overall group and the subgroups in which MRI provided added value. Likewise, we observed no differences in the number of additional lesions detected in the overall group except for multicentric lesions, which was larger in older patients ($p=0.02$). In the subgroup of patients in which MRI provided added value, the sensitivity for bilateral lesions was higher in patients with fatty breasts ($p=0.04$). Multifocal lesions were detected significantly better in premenopausal patients ($p=0.03$).

[☆] Please cite this article as: Carreira Gómez C, Zamora Romero J, Gil de Miguel A, Chiva de Agustín M, Plana Farrás MN, Martínez González J. El rendimiento de la RM en la estadificación preoperatoria del carcinoma de mama sería independiente de factores clínicos y patológicos: análisis de subgrupos. Radiología. 2015;57:229–238.

* Corresponding author.

E-mail addresses: carmen.carreira@salud.madrid.org, ccarreira.hflr@salud.madrid.org (C. Carreira Gómez).

PALABRAS CLAVE

Cáncer de mama;
Resonancia
magnética;
Estadificación
tumoral;
Densidad mamaria;
Carcinoma
intraductal

Conclusions: MRI is better than mammography and better than ultrasonography for establishing the size of the tumor and for detecting additional lesions. Our results did not identify any subgroups in which the technique was more useful.

© 2013 SERAM. Published by Elsevier España, S.L.U. All rights reserved.

El rendimiento de la RM en la estadificación preoperatoria del carcinoma de mama sería independiente de factores clínicos y patológicos: análisis de subgrupos

Resumen

Objetivo: Determinar si la densidad mamaria, la edad, el estado menopáusico y el carcinoma in situ en la biopsia constituyen grupos de pacientes en quienes la RM mamaria preoperatoria es más rentable.

Material y métodos: Estudiamos retrospectivamente a 264 pacientes intervenidas por cáncer de mama a las que se había realizado mamografía, ecografía y RM. Comparamos el tamaño tumoral medido con las 3 técnicas y su sensibilidad para detectar lesiones adicionales, tanto en todas las pacientes como en las clasificadas por densidad mamaria, edad, estado menopáusico o presencia de carcinoma intraductal en el estudio anatomopatológico. El estándar de referencia fue el diagnóstico anatomopatológico definitivo.

Resultados: La RM fue la técnica que coincidió más con el tamaño anatomopatológico y mejor detectó las lesiones adicionales. Con la RM no observamos diferencias entre grupos al establecer el tamaño tanto en el total de la muestra como en el subgrupo de pacientes donde la RM tuvo valor añadido. Tampoco hubo diferencias para detectar lesiones adicionales en el grupo general excepto para lesiones multicéntricas, mayor en pacientes de más edad ($p=0,02$). En el grupo de pacientes donde la RM tuvo valor añadido, la sensibilidad para las lesiones bilaterales fue superior en las pacientes con mamas grasas ($p=0,04$). Las lesiones multifocales se detectaron significativamente mejor en pacientes premenopáusicas ($p=0,03$).

Conclusiones: La RM es mejor que la mamografía y la ecografía para establecer el tamaño tumoral y detectar lesiones adicionales. Nuestros resultados no identifican subgrupos donde la técnica sea más rentable.

© 2013 SERAM. Publicado por Elsevier España, S.L.U. Todos los derechos reservados.

Introduction

Using MR to stage breast carcinoma before surgery improves the results of conventional techniques to determine tumor size,¹⁻³ define the extensive intraductal component which frequently accompanies infiltrating tumors¹ and better detect multifocal, multicentric and contralateral (2-7%)^{6,7} lesions.^{4,5} The information it provides can modify surgical approach in a significant percentage of patients because it usually allows surgery to be used more often and can decrease the rate of damaged margins and therefore the percentage of relapses. However at present all this is controversial.^{4,8-10} MRIs are limited due to its lower specificity and therefore, due to a significant percentage of false positives,¹¹⁻¹⁴ which makes it necessary for other imaging techniques or additional interventionist procedures to be used to clarify diagnosis. Generalized use of MR for preoperative staging is debatable. The *European Society of Breast Cancer Specialists* has revised its indications and they recommend patients to be informed of the potential risks and benefits of including it in the diagnostic protocol, as well as of the basic requirements to apply it in breast units.¹⁵ Many papers have analyzed the characteristics of the patients or

the tumor that can predict the situations in which preoperative MRIs have an important added value. Some have been especially designed to assess the accuracy of this modality in subgroups of patients¹⁶⁻²²; conclusions have been drawn in subgroups of concrete patients from other, more general articles,^{7,9} which assessed the impact of the precision of this modality. However, these studies are very different methodologically and their results are some times contradictory.

Consequently, this study aims to determine whether there are subgroups of patients in whom the MRIs are significantly more profitable to determine lesion size and detect additional lesions, so as to transfer the results to clinical practice and establish when it is convenient to use MR to stage breast cancer.

Material and methods

Patients

We present a retrospective study of a series of consecutive breast cancer patients studied with mammograms, ultrasound and MRIs, using as the standard of reference the

Download English Version:

<https://daneshyari.com/en/article/4246414>

Download Persian Version:

<https://daneshyari.com/article/4246414>

[Daneshyari.com](https://daneshyari.com)