Material adicional

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Valor pronóstico a largo plazo del análisis completo de los índices de resonancia magnética cardiaca tras un infarto de miocardio con elevación del segmento ST

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All images were acquired by a phased-array body surface coil during breath-holds and were triggered by electrocardiogram.

Cine images were acquired at rest and during infusion of low-dose (10 µg/kg/min) dobutamine in 2-, 3-, and 4-chamber views and every 1 cm in short-axis views with steady-state free precession imaging sequences (repetition time/echo time: 25/1.6 ms; flip angle: 61°; matrix: 256×256; slice thickness: 7 mm; interslice interval, 3 mm).

Edema detection was carried out using short-axis, black blood, T2-weighted short TI inversion recovery sequences. A half-Fourier acquisition single-shot turbo spin echo multisection sequence was used (repetition time, 2 R-R intervals; echo time, 33 ms; inversion time, 170 ms; slice thickness, 8 mm; interslice interval, 2 mm; flip angle, 180°; matrix, 256×146; bandwidth, 235 Hz/pixel and a spatial resolution 2.3×1.3). A filter was applied to normalize the signal intensity according to the distance to the coil.

After obtaining the images of cine and edema, 0.1 mmol/kg of gadolinium (Gadopentetate dimeglumine, Magnevist®) was administered at a flow rate of 5 ml/s, and images of first-pass perfusion at rest were acquired: 4 short-axis and 2 long axis every two beats. We used a gradient-echo fast low-angle shot sequence: Inversion time = 95 ms, recuperation time/echo time = 172/1.34 ms, flip angle = 12°, bandwidth = 460 Hz/pixel, matrix = 192×86, slice thickness = 8 mm and a spatial resolution 3.1×1.9 mm. Since the sequence lasts 60-90 seconds patients were instructed to maintain a long apnea, and then come back to produce another apnea.

Late gadolinium enhancement imaging was performed in the same projections used for cine images at least 10 min after gadolinium infusion. A segmented inversion recovery steady-state free precession imaging sequence was used (repetition time/echo time: 750/1.26 ms; slice thickness: 7 mm; interslice interval, 3 mm; flip angle: 45°; matrix: 256 x 127; bandwidth =780 Hz/pixel and a spatial resolution 1.8×1.3 mm), and inversion time was adapted in order to nullify myocardial signal.

Figure. Multivariate fractional polynomials adjusted for age and heart rate. The risk of MACE attributable to the number of segments shows a linear gradient.