

MR compatible cardiac devices - the other side of the coin

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Introduction:

Magnetic resonance imaging (MRI) has become the modality of choice for diagnosis and follow-up of numerous diseases, providing high quality images with unmatched tissue characterization, valuable information on perfusion, function, and metabolism. Concomitantly, the number of patients with implantable cardiac devices, has been steadily increasing. As a result, a significant percentage are likely to need an MRI during their lifetime.

Aim:

The aim of the study was to determine what percentage of patients who have had an MR compatible cardiac device actually required to undergo MRI. These were subdivided according to whether the need of such investigation could be predicted prior to the insertion of the device.

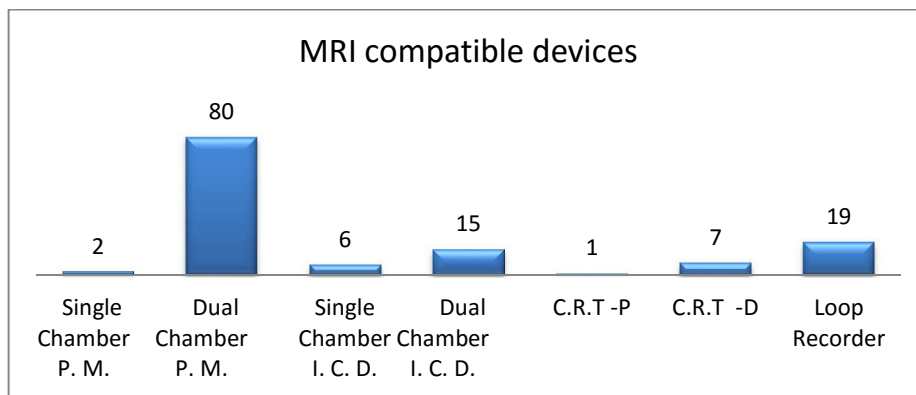
An analysis was also carried out to establish the additional cost of such devices over standard ones.

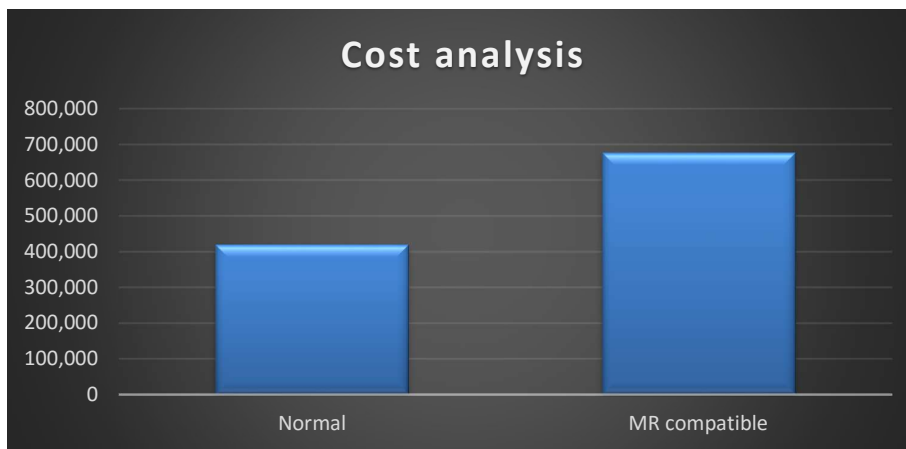
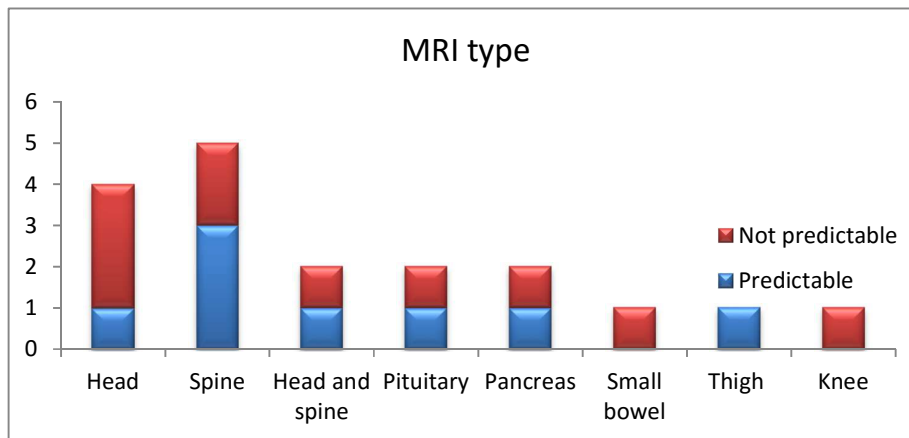
Methodology:

A retrospective study of all patients who had an MR compatible cardiac device inserted over six years was carried out. MRI performed after insertion was established using iSoft Clinical Manager. For each case, it was determined whether the need of such investigation was predictable prior to the implantation by evaluating clinical indication and previous scans. There were no exclusion criteria.

Results:

A total 130 devices were implanted, with average follow-up of two years, totalling 246 patients-years. 18 patients underwent an MRI, 10 of which were not predictable. Total cost of devices was estimated at €676,639, a 61% increase over the theoretical cost of using standard devices.





Limitations:

The study had a mean follow-up period of two years per patient. As cardiac devices last much more, longer follow-up would provide more accurate data.

Conclusion:

With the ever increasing use of MRI as an essential investigation modality, MR compatible devices may confer significant clinical benefit to the patient, even though this comes at increasing costs.