

THE ROLE OF IMAR ITERATIVE RECONSTRUCTION SOFTWARE IN THE REDUCTION OF METAL ARTIFACTS AND IMAGE QUALITY

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ABSTRACT

Introduction: Computed tomography is an indispensable diagnostic radiological method that is used daily in clinical practice. The modern design of new devices used today has led to a partial reduction of artifacts in CT images. Artifacts in radiology refer to any difference between the CT count on the image and the actual radiation attenuation in the object. A significant contribution to the scanning of structures with implants, artificial joints and pacemakers was made possible through the use of iMAR, the primary role of which is to obtain an image with a reduced level of metal artifacts in use with conventional reconstruction if the CT data is distorted by metal.

Methods: Used in this paper were data obtained from the analysis and review of available scientific and professional papers in the database, as well as data from the archives of the Institute of Clinical Radiology and images archived through the available PACS system.

Results: Using the data, I will show and explain in this paper the impact of iterative iMAR reconstruction using a Siemens TwinBeam Dual Energy technology, which can be combined with the iMAR algorithm to reduce metal artifacts.

Conclusion: Based on the collected data, the subjective quality of the image was significantly improved, and the artifacts caused by metal implants were significantly reduced. The most important factors for avoiding image artifacts remain precise positioning and the proper preparation of the patient.

Keywords: CT, iMAR, metal artifacts.

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