

TITLE: Analyzing the Usefulness of Motion Correction Software in Myocardial Perfusion Imaging

Authors

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Introduction

Myocardial Perfusion Imaging (MPI) is a very important tool in the assessment of Coronary Artery Disease (CAD) patients and worldwide data demonstrate an increasingly wider use and clinical acceptance. Nevertheless, it is a complex process and it is quite vulnerable concerning the amount and type of possible artefacts, some of them affecting seriously the overall quality and the clinical utility of the obtained data. One of the most inconvenient artefacts, but relatively frequent (20% of the cases), is related with patient motion during image acquisition. Mostly, in those situations, specific data is evaluated and a decision is made between A) accept the results as they are, considering that the “noise” so introduced does not affect too seriously the final clinical information, or B) to repeat the acquisition process. Another possibility could be to use the “Motion Correction Software” provided within the software package included in any actual gamma camera. The aim of this study is to compare the quality of the final images, obtained after the application of motion correction software and after the repetition of image acquisition.

Material and Methods

Thirty cases of MPI affected by Motion Artefacts and repeated, were used. A group of three, independent (blinded for the differences of origin) expert Nuclear Medicine Clinicians had been invited to evaluate the 30 sets of three images - one set for each patient - being (A) original image, motion uncorrected, (B) original image, motion corrected, and (C) second acquisition image, without motion. The results so obtained were statistically analysed.

Results and Conclusion

Results obtained demonstrate that the use of the Motion Correction Software is useful essentially if the amplitude of movement is not too important (with this specific quantification found hard to define precisely, due to discrepancies between clinicians and other factors, namely between one to another brand); when

that is not the case and the amplitude of movement is too important, then the percentage of agreement between clinicians is much higher and the repetition of the examination is unanimously considered indispensable.

Foi decidido que não será apresentada a versão integral deste documento.

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