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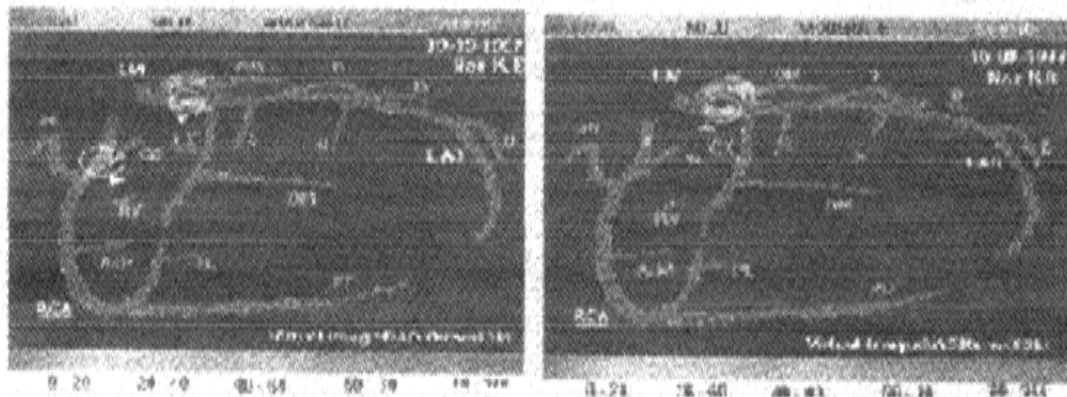
P1669 Realistic geometry cartographic imaging in evaluating patients with coronary artery disease – during pre and post intervention phase

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Based on a realistic geometry coronary artery model (RGCAM), we proposed an approach to localise abstraction in different coronary artery branches. Using kinetic modeling (k-model), we get disease dependant cartogram of cardiac haemodynamic variability. The beat-to-beat haemodynamic variability behavior, its deviation difference and correlation was calculated and a three-dimensional (3D) array was constructed and embedded on a RGCAM. The resultant images are the realistic geometry cartographic image (RGC-Imaging) representing coronary artery stenosis. This study was to assess the feasibility of using such RGC-imaging technique in evaluating patients with coronary artery disease, during pre and post intervention phase.

Methods: Using the signals obtained and by real time simulation of the data thereof, 33,600 coronary unit three-dimensional array was generated in 8 patients (all male). The array was then embedded into the RGCAM, obtaining a realistic geometry two dimensional view in the classic LAO and RAO projection with the chosen angulation of 60 and 30 degrees respectively.

Results: All the 8 RGC-imaging showed that the intervened vessels had reduced or no disease after intervention.



Pre and Post Intervention RGC-Images.

In conclusion: Our Modeling and Imaging studies have shown its potential in using haemodynamic variability realistic geometry cartographic Imaging techniques to assess patients during pre and post intervention phases. As the data of model simulation and reconstruction may pose some errors from the real one, the results may still be needed to be confirmed in mega clinical trials.