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PRELIMINARY STUDY OF REAL-TIME THREE-DIMENSIONAL DOBUTAMINE STRESS ECHOCARDIOGRAPHY FOR CORONARY ARTERY DISEASE ASSESSMENT

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Objectives To evaluate the efficacy and safety of Real-time three-dimensional dobutamine stress echocardiography for coronary artery disease assessment.

Methods Fourteen patients suspected of coronary artery disease (CAD) underwent Real-time three-dimensional dobutamine stress echocardiography, initial dobutamine infusion was 5 $\mu g\,kg^{-1}\,min^{-1}$, followed by 10 $\mu g\,kg^{-1}\,min^{-1}$and peak infusion 20 $\mu g\,kg^{-1}\,min^{-1}$ in 3 min stages. The Real-time three-dimensional (RT3D) imagings were captured in baseline state, stress stages and after the study, the imagings were assessed by wall motion score index (WMSI) and regional ejection fraction (EF), the parameters of these two modalities were made comparison with coronary angiography (CAG), during the study adverse reactions were also observed.

Results All patients completed the stress study uneventfully, Compared with the CAG these two modalities having no significant difference ($p>0.05$) and having satisfying agreement (κ values 0.704 and 0.75 respectively), the diagnostic parameters of these modalities were: sensitivity 78% vs 89%, specificity 92% vs 88%, positive predictive value (PPV) 88% vs 84%, negative predictive value (NPV) 85% vs 91% and overall accuracy 86% vs 88%.

Conclusions Real-time three-dimensional dobutamine stress echocardiography is an effective and safe technique to assess coronary artery disease which has clinical application valuer.