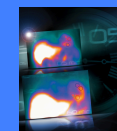


## FMTVDM<sup>®</sup> Provides The First Nuclear Quantitative Method for Nuclear Cardiology and Introduces a New Era for Nuclear Cardiology

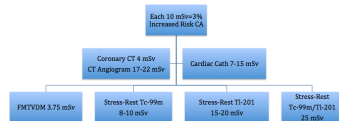
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### INTRODUCTION

- The foundational work of nuclear cardiology began with Blumgart's 1925 study of circulation time. Blumgart focused on quantitatively measuring isotope change over time.
- Since then Nuclear Cardiology has focused on qualitative image interpretation resulting in sensitivity and specificity issues.
- A demand for reducing patient radiation exposure has resulted in a call for "stress-first/stress-only/stress-stress" imaging.
- A preliminary VA study<sup>1</sup> demonstrated FMTVDM<sup>®</sup> "stress-stress" imaging statistically out performed the MPI "stress-rest" approach, while lowering patient mSv radiation exposure.
- This purpose of this study is to validate the use of FMTVDM<sup>®</sup> and its Artificial Intelligence (AI) at 7-Centers in the USA and Asia with reduced patient radiation exposure.*



### MULTICENTER STUDY METHODS

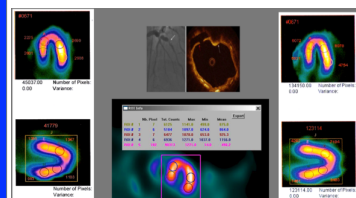
- 300 Men & Women from SEVEN clinical centers in the USA and Asia, ranging from 21-85 years of age were studied.
- Patients underwent both FMTVDM<sup>®</sup> Protocol and Quantitative Coronary Artery (QCA) Analysis.

### FMTVDM<sup>®</sup> PROTOCOL

FMTVDM<sup>®</sup> "stress-first/stress-only/STRESS-STRESS" imaging sequence was performed in each patient<sup>1-5</sup>, following TFM<sup>®</sup> camera calibration.

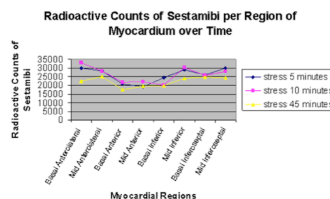


After FMTVDM<sup>®</sup> Imaging, acquired images underwent quantification.

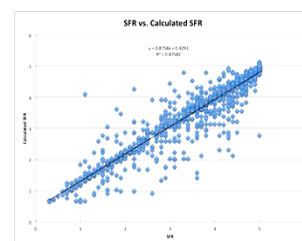


### FMTVDM<sup>®</sup> TRUE QUANTIFICATION of BLOOD FLOW & METABOLISM

Comparison of the FMTVDM<sup>®</sup> True Quantification measurements: Regions **WITHOUT ISCHEMIA** reach equilibrium within minutes continually releasing and taking up the injected isotope as shown in the **ANTERIOR** regions of myocardium, while **ISCHEMIC** regions show **DIFFERENT** results depending upon the severity of disease and the underlying inflammatory component/effect.



### COMPARISON OF CORONARY FLOW (CFR) RESERVE USING FMTVDM<sup>®</sup> with QCA



### ARTIFICIAL INTELLIGENCE (AI) USING FMTVDM<sup>®</sup>

- Measurements made following FMTVDM<sup>®</sup> protocol ( $p=3.8 \times 10^{-8}$ ) were introduced into proprietary equations protected by patent #9566037 automatically deriving CFR.
- These measurements and subsequent derivation of CFR (QCFR/FCFR) were done at multiple times and are NOT dependent on isotope, camera type (SPECT, PET), camera company or operator availability.

### RESULTS

- Following assessment of each clinical facility to determine adequately trained personnel, operators at 7-Centers of Excellence (COE) were recruited to conduct "stress-first/stress-only/STRESS-STRESS" FMTVDM Imaging.
- Outcomes were independent of isotope, camera type, camera company or "stressor" employed.
- Outcome analysis was obtained using AI measured and quantitatively derived CFR (QCFR/FCFR) results using FMTVDM<sup>®</sup> measurements and proprietary equations, compared with that obtained from direct QCA.
- The results from the 7-COE yielded regression analysis of  $y=(0.8758 \cdot x)+0.4291$ , where  $y$ =the QCFR and  $x$ =the QCA measured CFR.
- The R2 value 0.87582 demonstrated the 7-COE accurately, consistently and reproducibly clinically implemented FMTVDM<sup>®</sup> to derive by AI, QCFR/FCFR in ALL 300 patients.

### CONCLUSIONS

- 1 FMTVDM<sup>®</sup> utilizing AI accurately, consistently and reproducibly provided TRUE QUANTIFICATION of CAD in 7-COE in the USA and Asia.
- 2 The utilization of AI FMTVDM<sup>®</sup> provided accurate, consistent and reproducible quantitative CFR beginning with the TRUE QUANTIFICATION of isotope redistribution using the patented proprietary equations independent of isotope, camera type (SPECT, PET), camera company, operator variables or site location.
- 3 FMTVDM<sup>®</sup> provides the FIRST TRULY QUANTITATIVE, TRULY AI Nuclear Imaging of CAD and CFR introducing a New Era of Nuclear Cardiology.

### REFERENCES

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### ACKNOWLEDGEMENT

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