



University  
of Glasgow | Institute of Cardiovascular  
& Medical Sciences

# Case(s) From Scotland

Keith G Oldroyd

Consultant Interventional Cardiologist

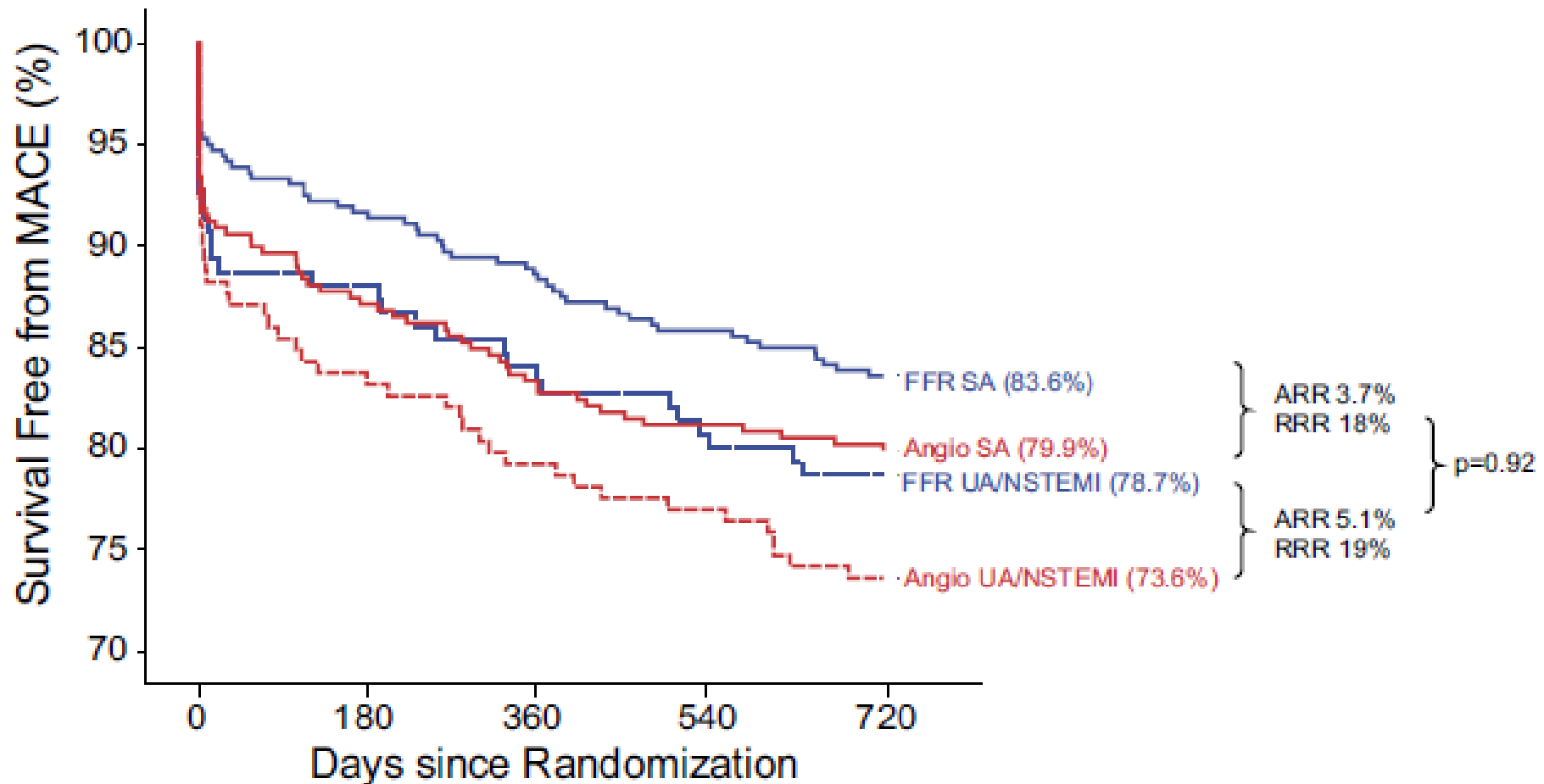
West of Scotland Regional Heart & Lung Centre

Golden Jubilee National Hospital

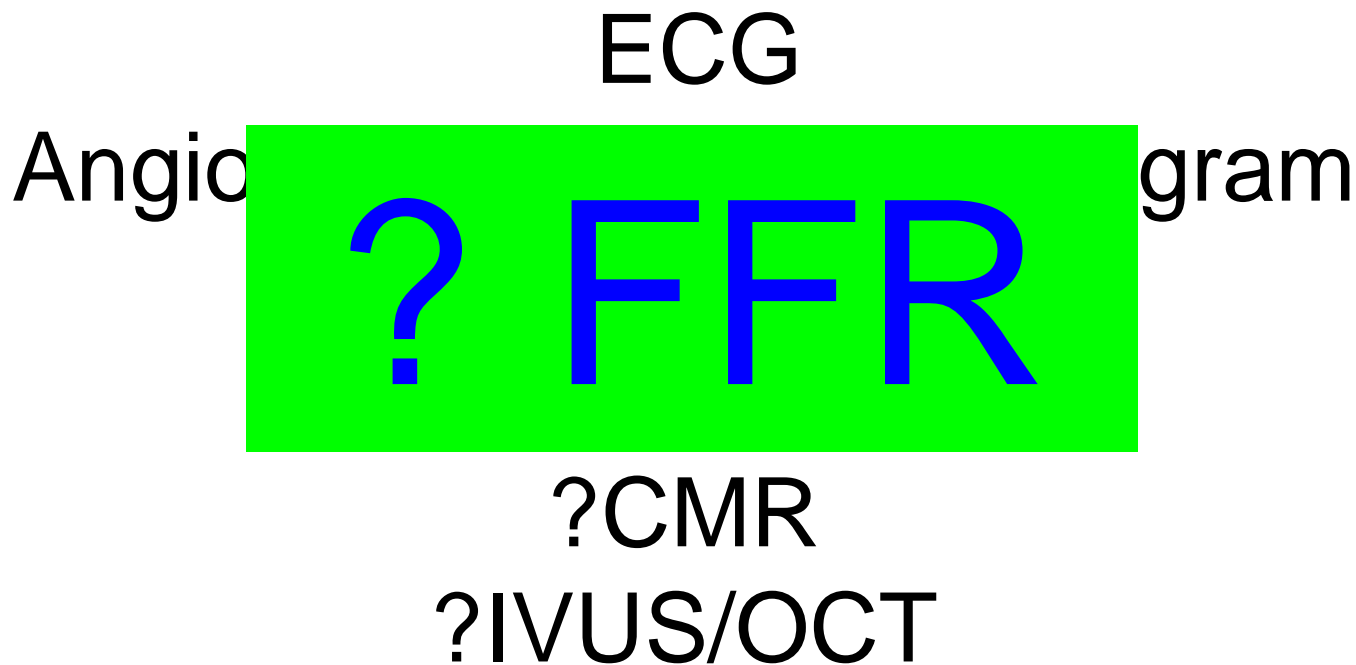
Glasgow, Scotland

# FAME: Unstable Angina and NSTEMI

(Stabilised i.e. not 5 < days)



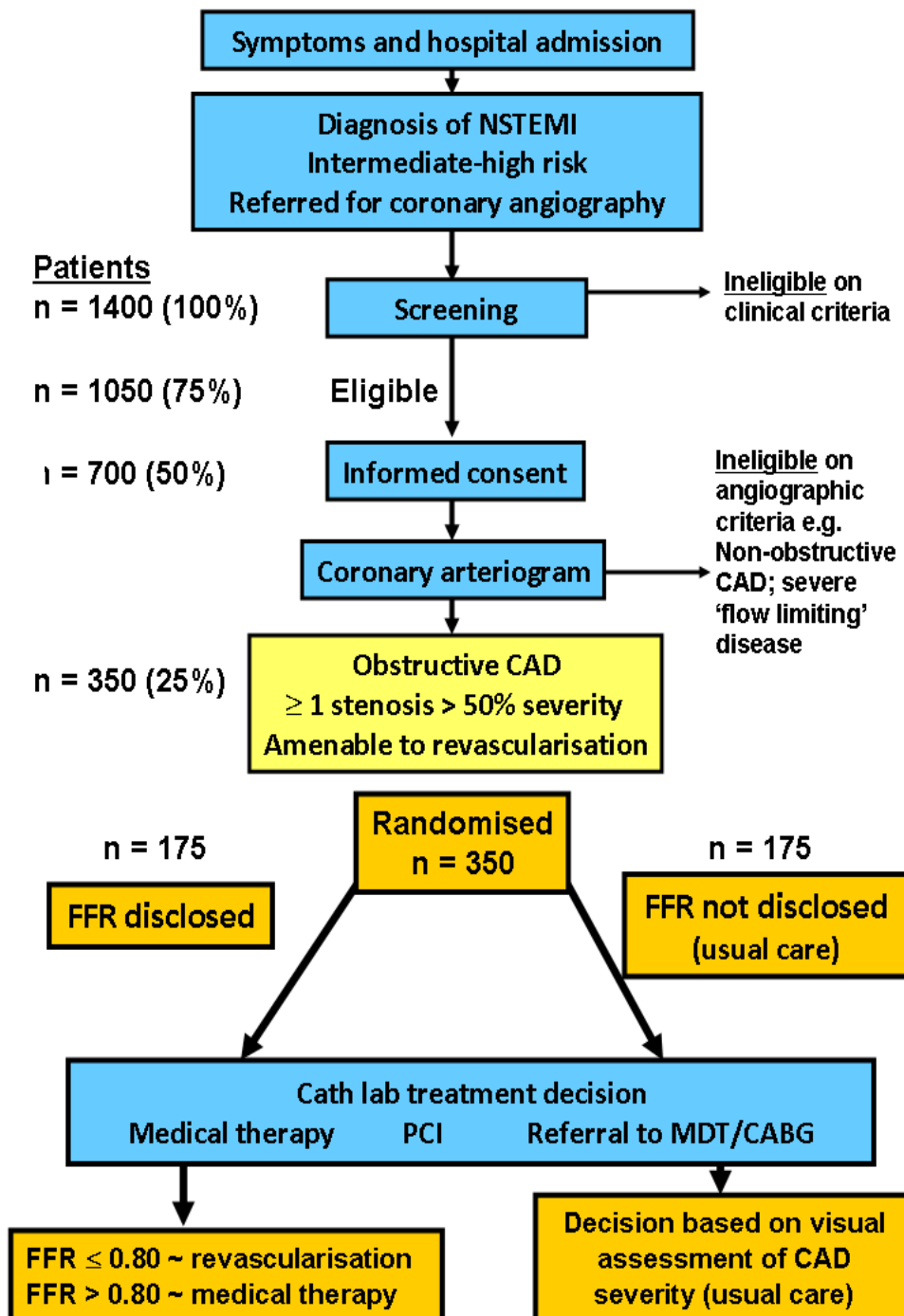
# Can You Always Identify the “Culprit” Lesion in Patients Presenting with NSTEMI +/- Multi-Vessel Disease?



Should You Always Stent the  
“Culprit” Lesion in Patients  
Presenting with NSTEMI?

? FFR

# FAMOUS NSTEMI



# FAMOUS - NSTEMI

- *Primary endpoint*
  - Between-group difference in the proportion of patients allocated to medical management compared to revascularisation
- *Power calculation*
  - 90% power at a 5% level of significance to detect a 100% increase in patients being treated medically
  - Absolute rate of 15% increasing to 30% in FFR disclosed group
- *Secondary endpoints (selected)*
  - ROC values for FFR and subsequent adverse events.
  - Health-care costs associated with the index hospitalisation (or subsequent revascularisation).
  - Difference in QoL between each group at 12 months.
  - Relationship between FFR results and health outcomes in the longer term.
- *Health Outcomes*
  - Death from any cause, CV death, non-fatal MI
  - Unplanned hospitalisation for unstable angina or CHF or TIA/Stroke
  - PCI or CABG



Female

Room: 6

PR interval 172 ms  
QRS duration 108 ms  
QT/QTc 492/487 ms  
P-R-T axes 48 -55 83

Sinus bradycardia

Left axis deviation

ST &amp; Marked T wave abnormality, consider anterolateral ischemia

Prolonged QT

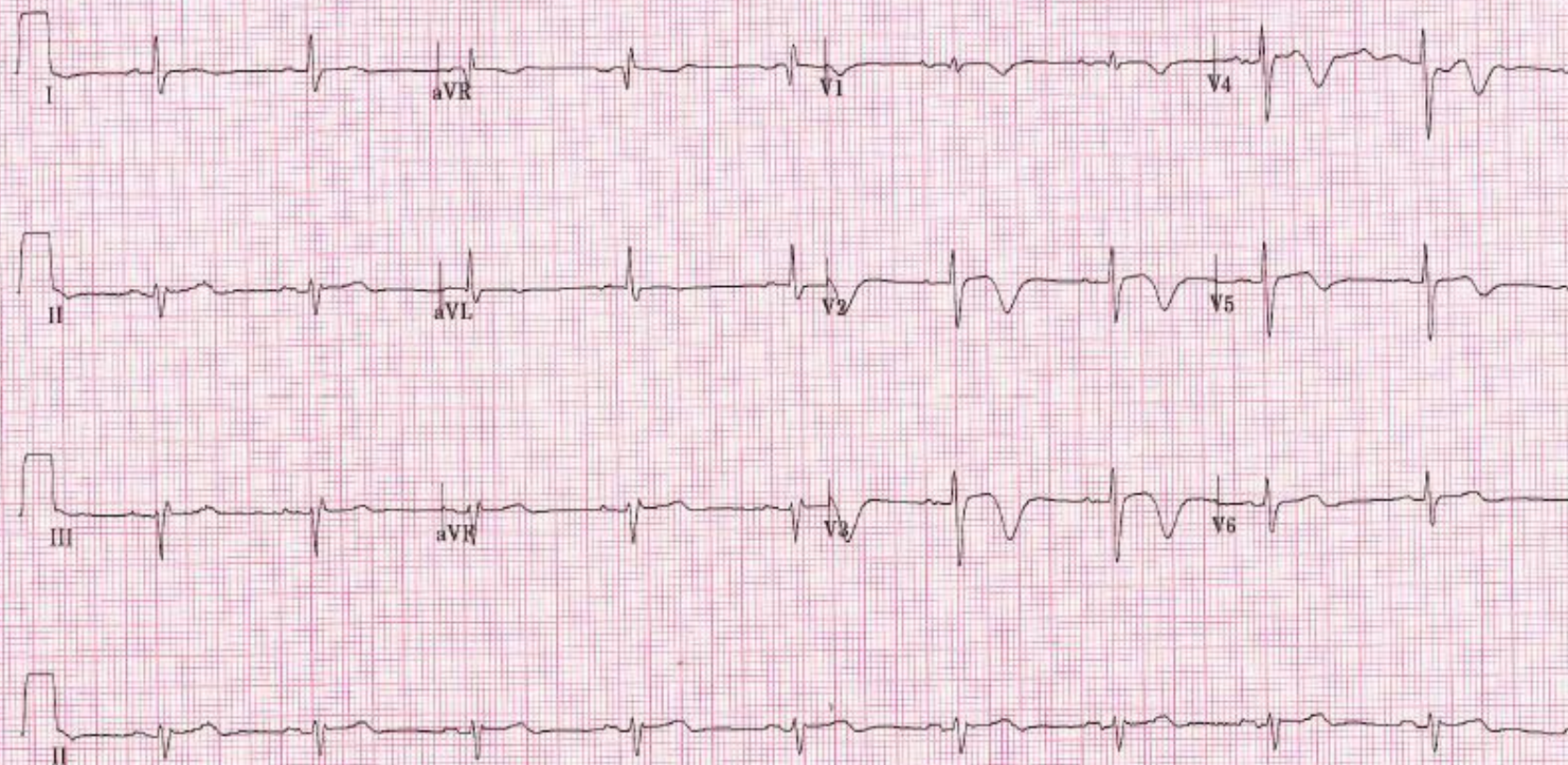
Technician: SS

Test ind: ROUTINE

Referred by:

Unconfirmed

LOCATION: 2C



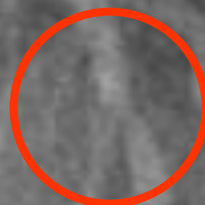


3108323245

04/0

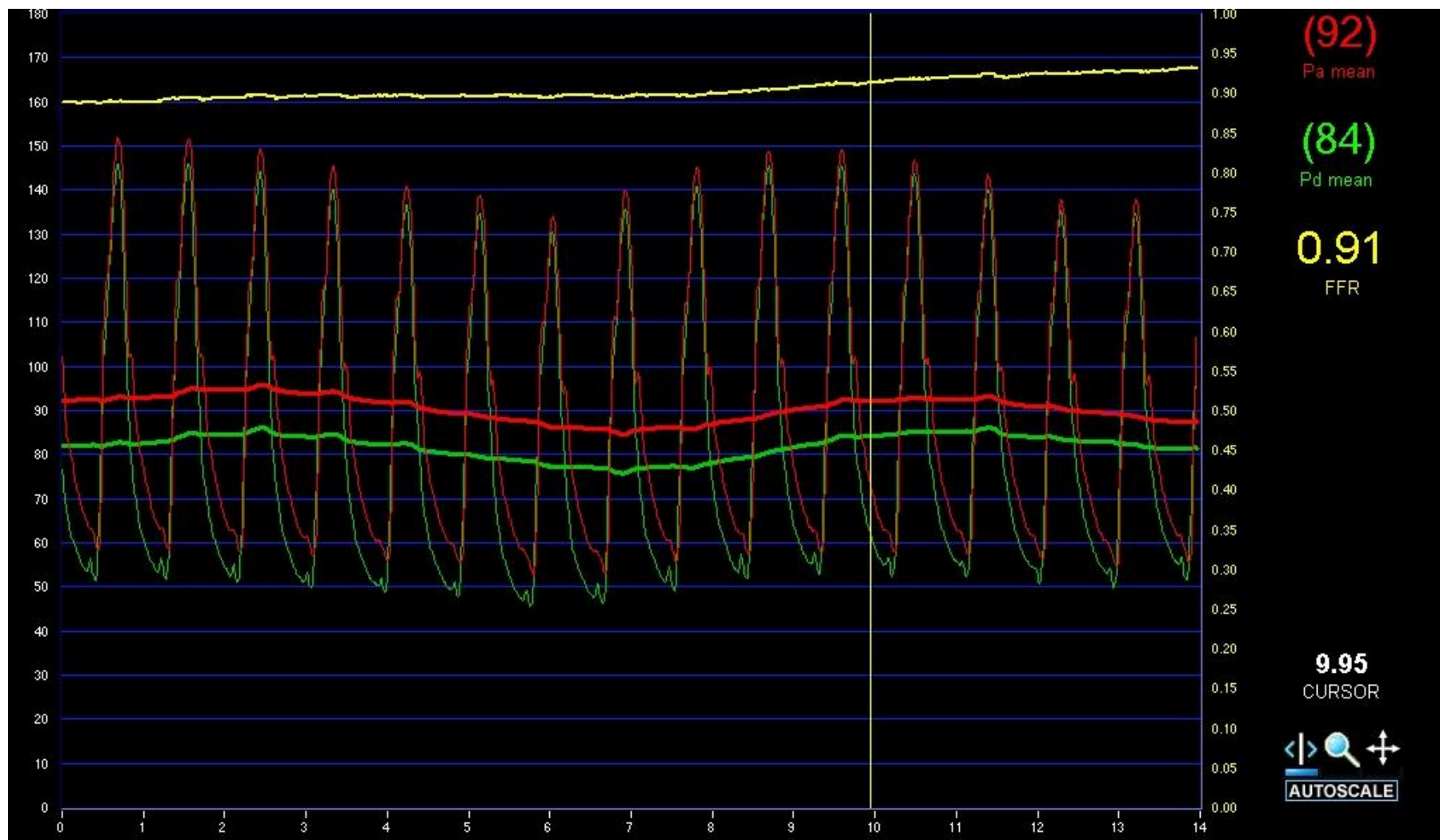
PROF K OLDROYD

Golden Jubilee National Ho...

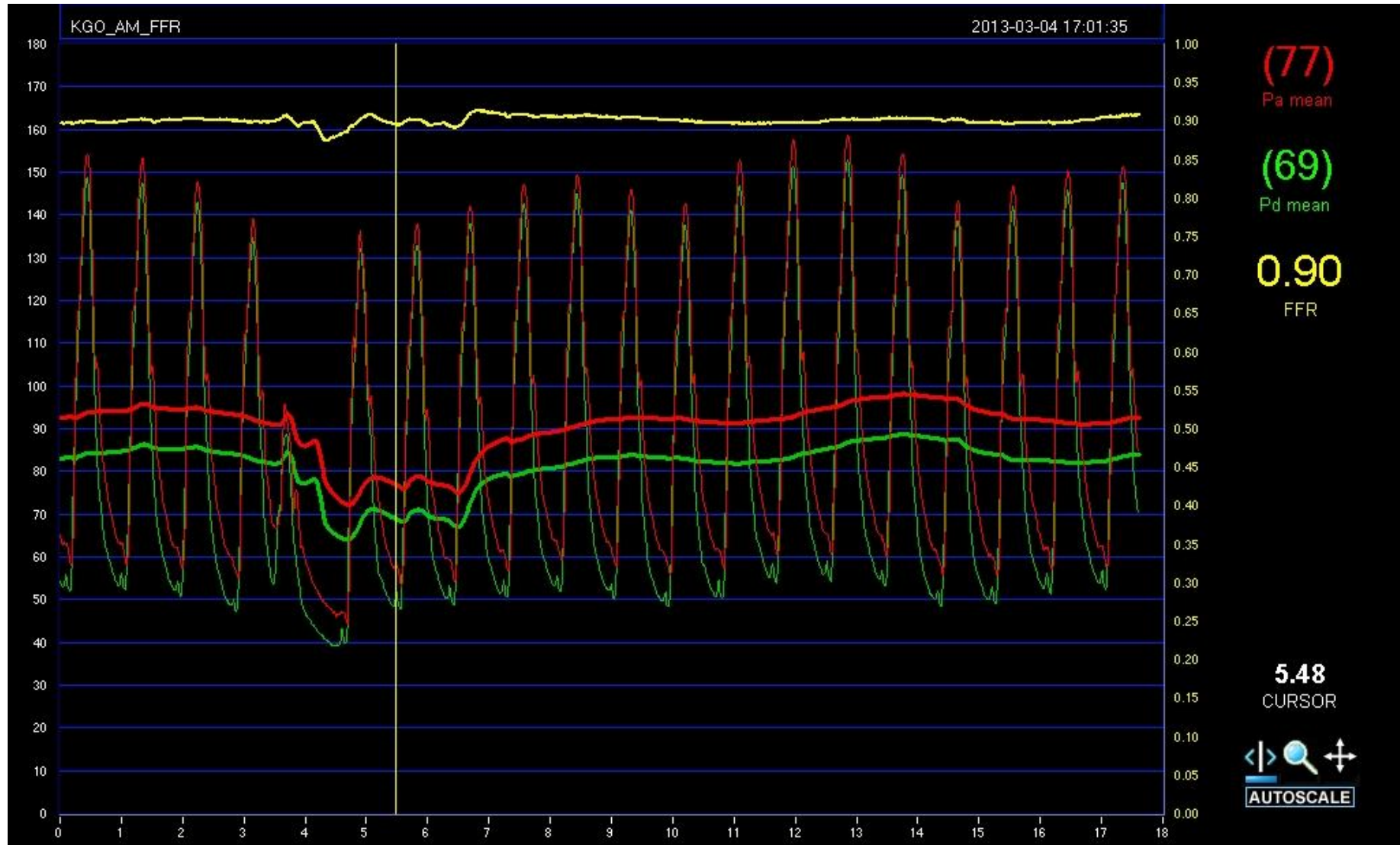




# FFR #1 – iv adenosine



# FFR #2 – iv adenosine



# FFR #3 – ic adenosine 60mcg



ID:2907653482

15-APR-2013 15:13:51

GOLDEN JUBILEE NATIONAL HOSPITAL

29-JUL-1965 (47 yr)  
Female Caucasian

Room: 5  
Loc: 0

Vent. rate	46	BPM
PR interval	148	ms
QRS duration	96	ms
QT/QTc	442/386	ms
P-R-T axes	30 11	46

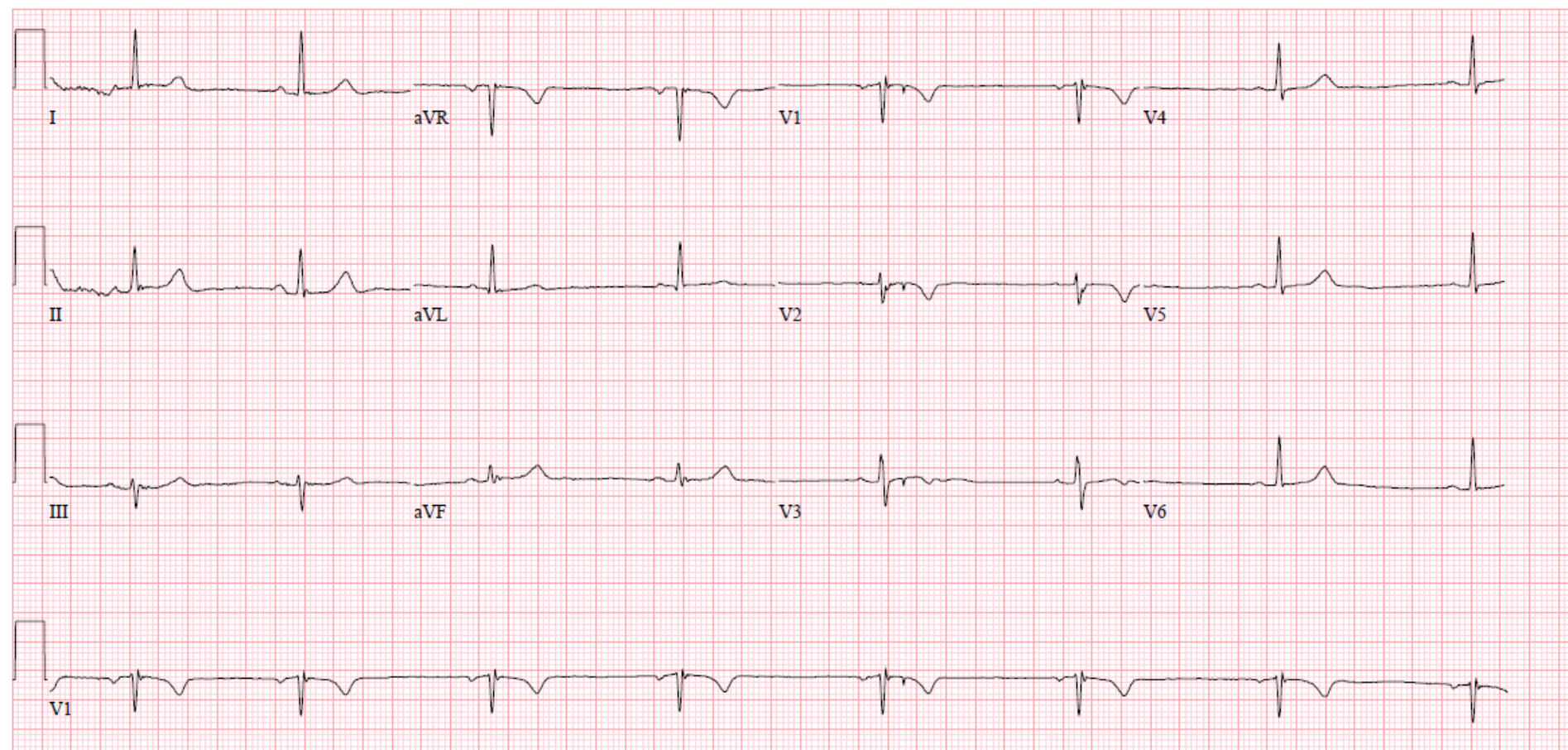
Sinus bradycardia  
T wave abnormality, consider anterior ischemia  
No previous ECGs available

Technician: AA  
Test ind: ADMISSION

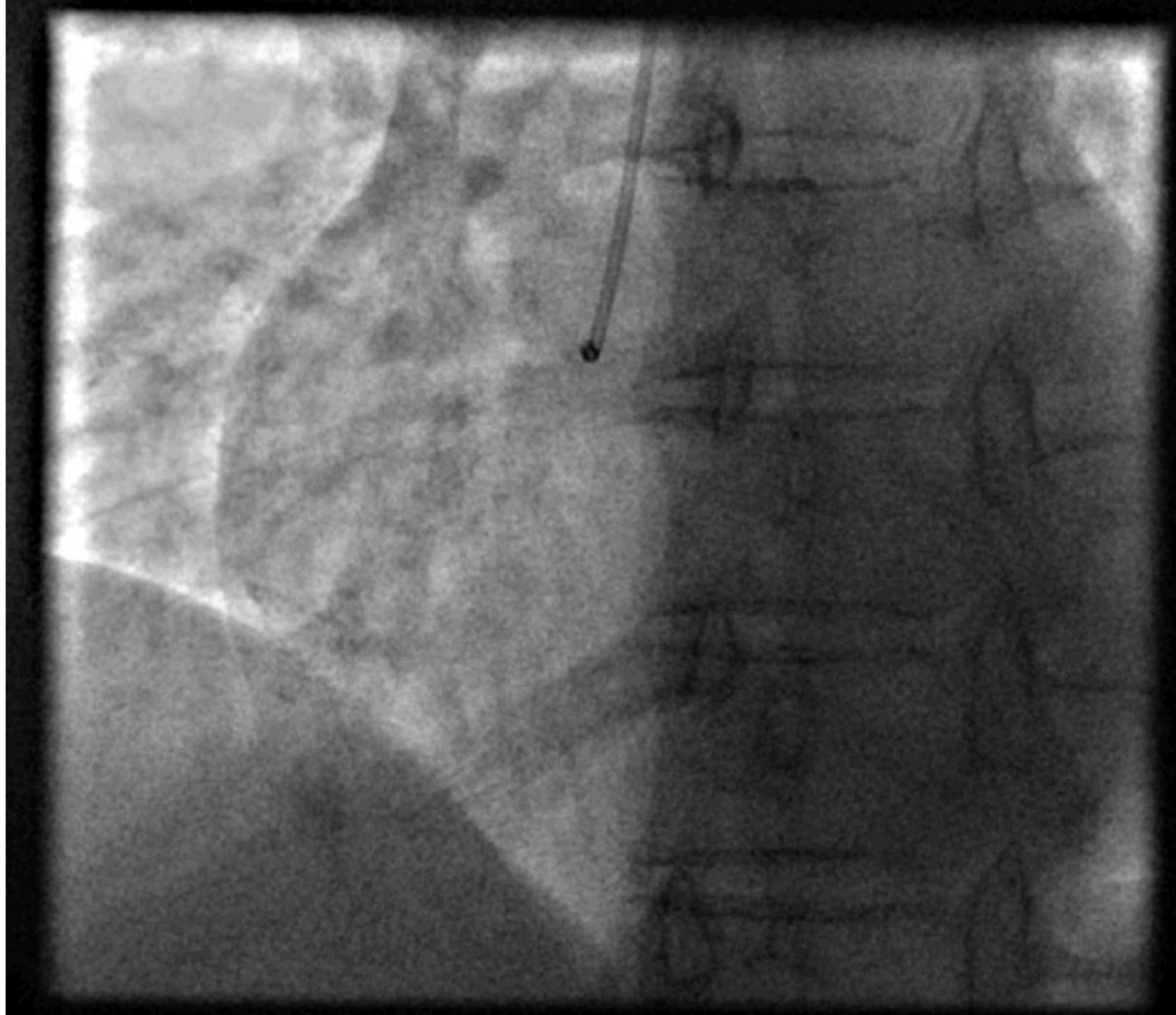
Referred by:

Unconfirmed

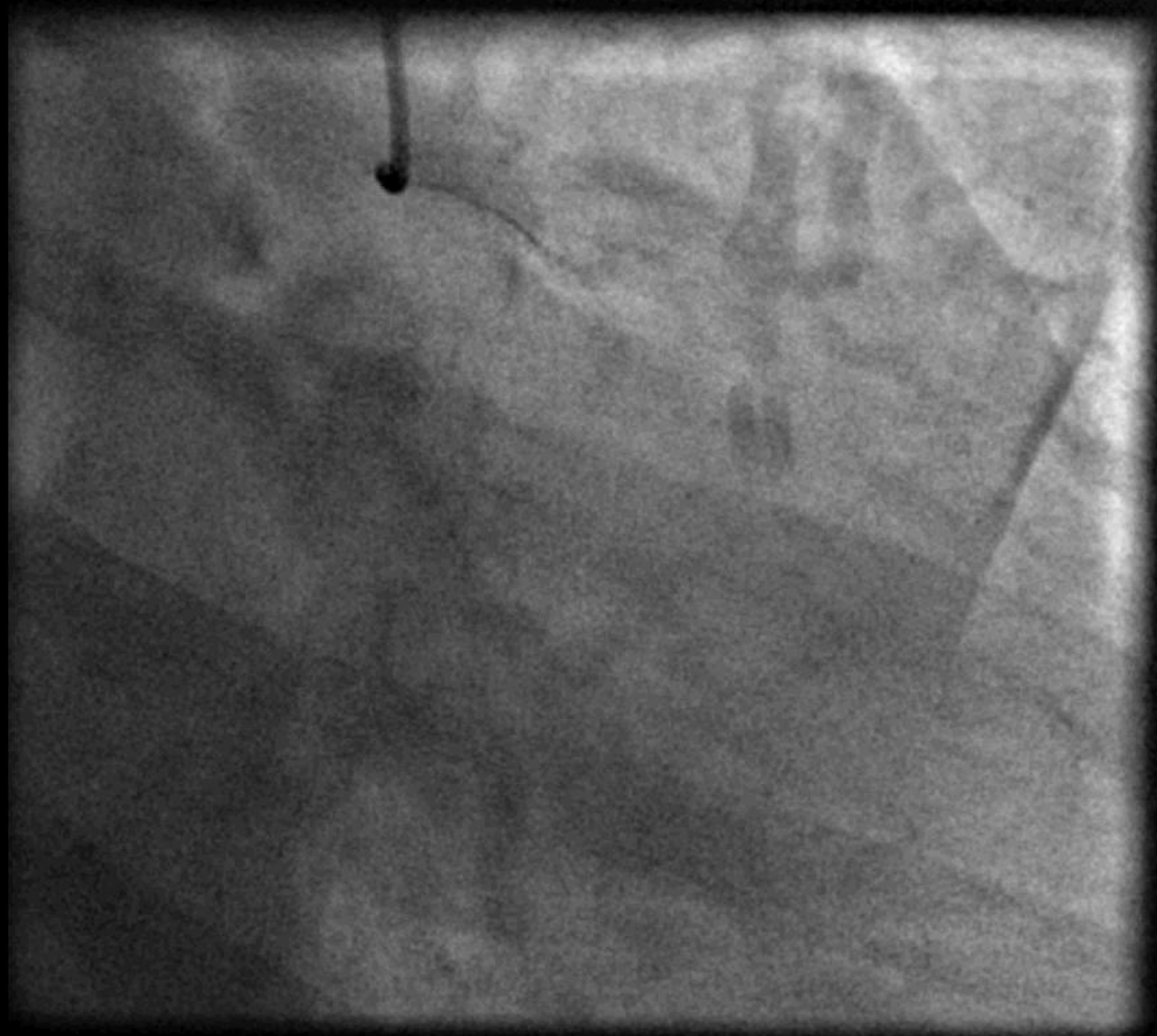
LOCATION: 2C













FOLDER/PATIENT	PATIENT ID	DATE	TIME	VESSEL	PROCEDURE	ACTION	TYPE	SIZE
COUBROUGH	CM - LAD	2013-04-15	17:05:43				FFR	28Kb
COOPER	CM - LAD	2013-04-15	17:03:35				FFR	89Kb
COLIN KEMP 2905645636	CM - LAD	2013-04-15	17:02:01				FFR	11Kb
COLIN CHATTERTON 25017	CM - LAD	2013-04-15	16:59:58				FFR	89Kb
CN 1707596268	CM - LAD	2013-04-15	16:59:03				FFR	12Kb
CM - LAD	CM - LAD	2013-04-15	16:57:07				FFR	12Kb

UPDATE

EDIT

PRINT

PLAY ▶

EXPORT

RENAME

DELETE

SETUP

CM - LAD

2013-04-15 16:57:07

## Resting Pd/Pa



**(90)**  
Pa mean

**(51)**  
Pd mean

**0.57**  
FFR

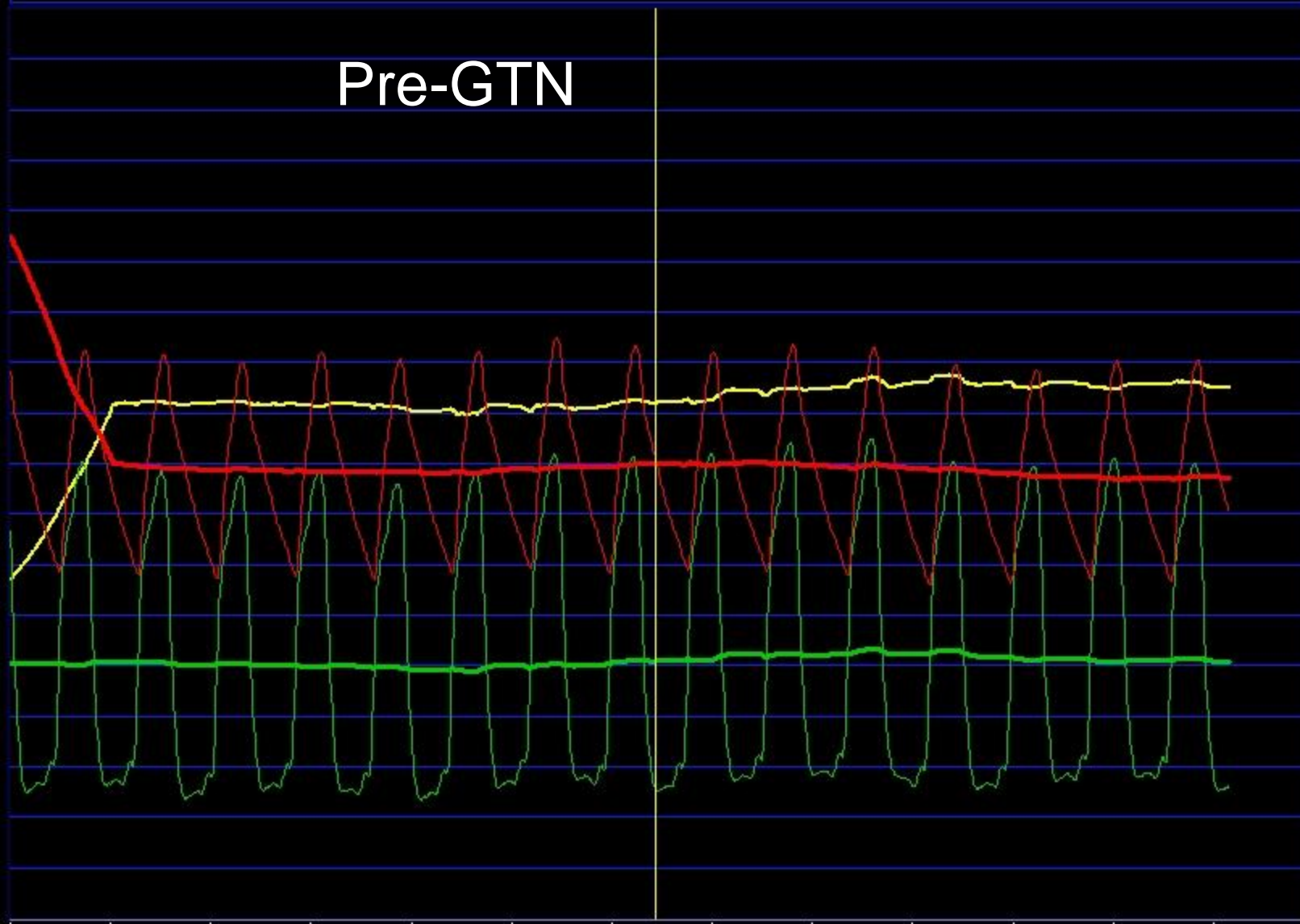
**6.44**  
CURSOR





FOLDER/PATIENT	PATIENT ID	DATE	TIME	VESSEL	PROCEDURE	ACTION	TYPE	SIZE
COUBROUGH	CM - LAD	2013-04-15	17:05:43				FFR	28Kb
COOPER	CM - LAD	2013-04-15	17:03:35				FFR	89Kb
COLIN KEMP 2905645636	CM - LAD	2013-04-15	17:02:01				FFR	11Kb
COLIN CHATTERTON 25017	CM - LAD	2013-04-15	16:59:58				FFR	89Kb
CN 1707596268	CM - LAD	2013-04-15	16:59:03				FFR	12Kb
CM - LAD	CM - LAD	2013-04-15	16:57:07				FFR	12Kb

CM - LAD 2013-04-15 16:57:07



**(90)**  
 Pa mean

**(51)**  
 Pd mean

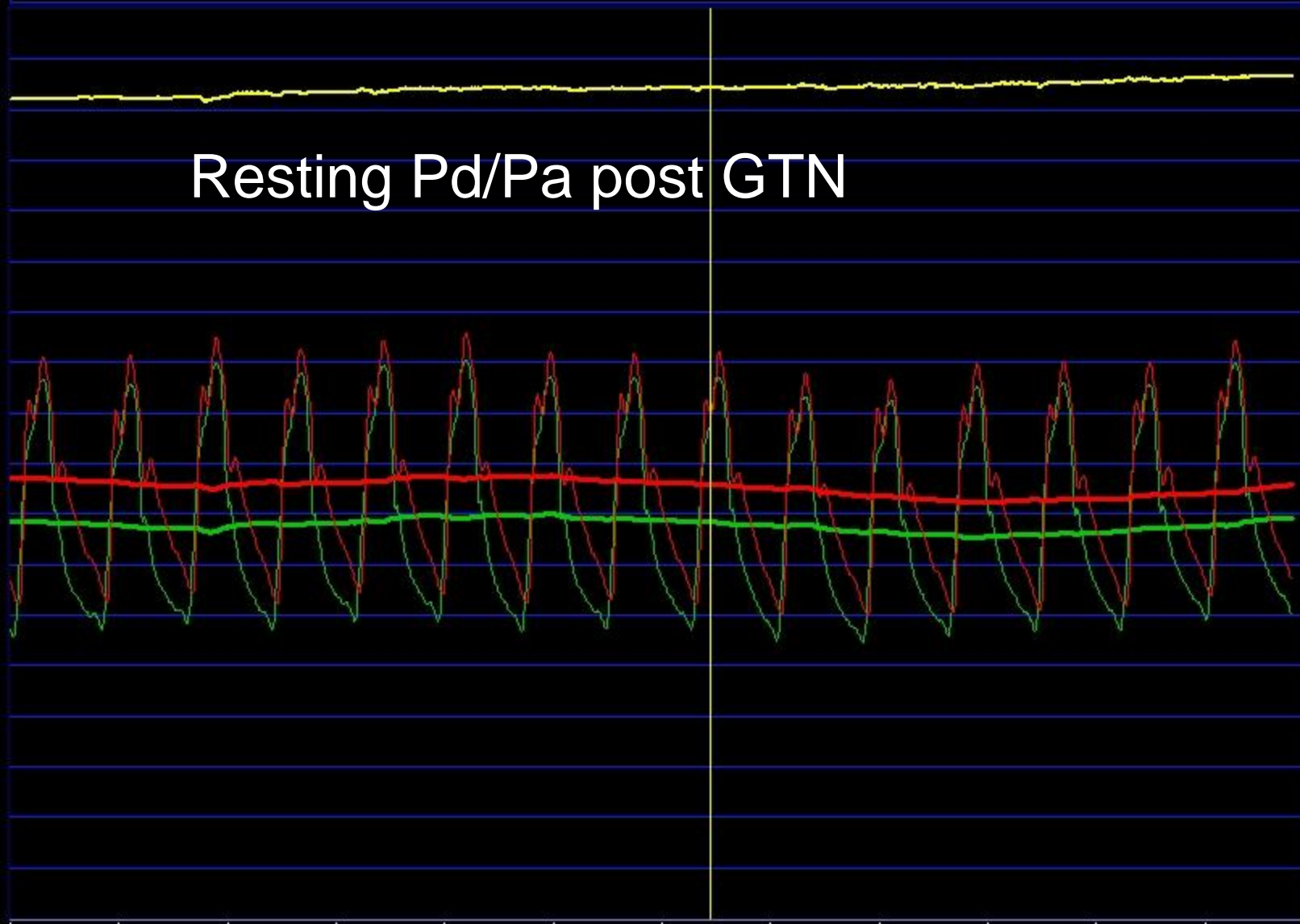
**0.57**  
 FFR

**6.44**  
 CURSOR



FOLDER/PATIENT	PATIENT ID	DATE	TIME	VESSEL	PROCEDURE	ACTION	TYPE	SIZE
COUBROUGH	CM - LAD	2013-04-15	17:05:43				FFR	28Kb
COOPER	CM - LAD	2013-04-15	17:03:35				FFR	89Kb
COLIN KEMP 2905645636	CM - LAD	2013-04-15	17:02:01				FFR	11Kb
COLIN CHATTERTON 250172	CM - LAD	2013-04-15	16:59:58				FFR	89Kb
CN 1707596268	CM - LAD	2013-04-15	16:59:03				FFR	12Kb
CM - LAD	CM - LAD	2013-04-15	16:57:07				FFR	12Kb

CM - LAD 2013-04-15 16:58:03



1.00  
 0.95  
 0.90  
 0.85  
 0.80  
 0.75  
 0.70  
 0.65  
 0.60  
 0.55  
 0.50  
 0.45  
 0.40  
 0.35  
 0.30  
 0.25  
 0.20  
 0.15  
 0.10  
 0.05  
 0.00

(86)  
 Pa mean  
 (78)  
 Pd mean  
 0.91  
 FFR  
 6.45  
 CURSOR  
 AUTOSCALE

FOLDER/PATIENT	PATIENT ID	DATE	TIME	VESSEL	PROCEDURE	ACTION	TYPE	SIZE
COUBROUGH	CM - LAD	2013-04-15	17:09:49				CFR	129Kb
COOPER	CM - LAD	2013-04-15	17:09:16				FFR	25Kb
COLIN KEMP 2905645636	CM - LAD	2013-04-15	17:05:43				FFR	29Kb
COLIN CHATTERTON 250172	CM - LAD	2013-04-15	17:03:35				FFR	69Kb
CN 1707596269	CM - LAD	2013-04-15	17:02:01				FFR	11Kb
CM - LAD	CM - LAD	2013-04-15	16:59:56				FFR	69Kb

UPDATE

EDIT

PRINT

PLAY ▶

EXPORT

RENAME

DELETE

SETUP

CM - LAD 2013-04-15 16:59:56

FFR #1 – iv adenosine



(89)  
Pa mean

(77)  
Pd mean

0.87  
FFR

41.57  
CURSOR



FOLDER/PATIENT	PATIENT ID	DATE	TIME	VESSEL	PROCEDURE	ACTION	TYPE	SIZE
COUBROUGH	CM - LAD	2013-04-15	17:09:49				CFR	129Kb
COOPER	CM - LAD	2013-04-15	17:09:16				FFR	25Kb
COLIN KEMP 2905645636	CM - LAD	2013-04-15	17:05:43				FFR	29Kb
COLIN CHATTERTON 250172	CM - LAD	2013-04-15	17:03:35				FFR	69Kb
CN 1707596269	CM - LAD	2013-04-15	17:02:01				FFR	11Kb
CM - LAD	CM - LAD	2013-04-15	16:59:58				FFR	69Kb

CM - LAD 2013-04-15 17:03:35

FFR #2 – iv adenosine



(87)  
Pa mean

(76)  
Pd mean

0.87  
FFR

48.30  
CURSOR





FOLDER/PATIENT	PATIENT ID	DATE	TIME	VESSEL	PROCEDURE	ACTION	TYPE	SIZE
COUBROUGH	CM - LAD	2013-04-15	17:09:49				CFR	129Kb
COOPER	CM - LAD	2013-04-15	17:09:16				FFR	25Kb
COLIN KEMP 2905945936	CM - LAD	2013-04-15	17:05:43				FFR	28Kb
COLIN CHATTERTON 25017	CM - LAD	2013-04-15	17:03:35				FFR	69Kb
CN 1707596269	CM - LAD	2013-04-15	17:02:01				FFR	11Kb
CM - LAD	CM - LAD	2013-04-15	16:59:58				FFR	69Kb

UPDATE

EDIT

PRINT

PLAY ▶

EXPORT

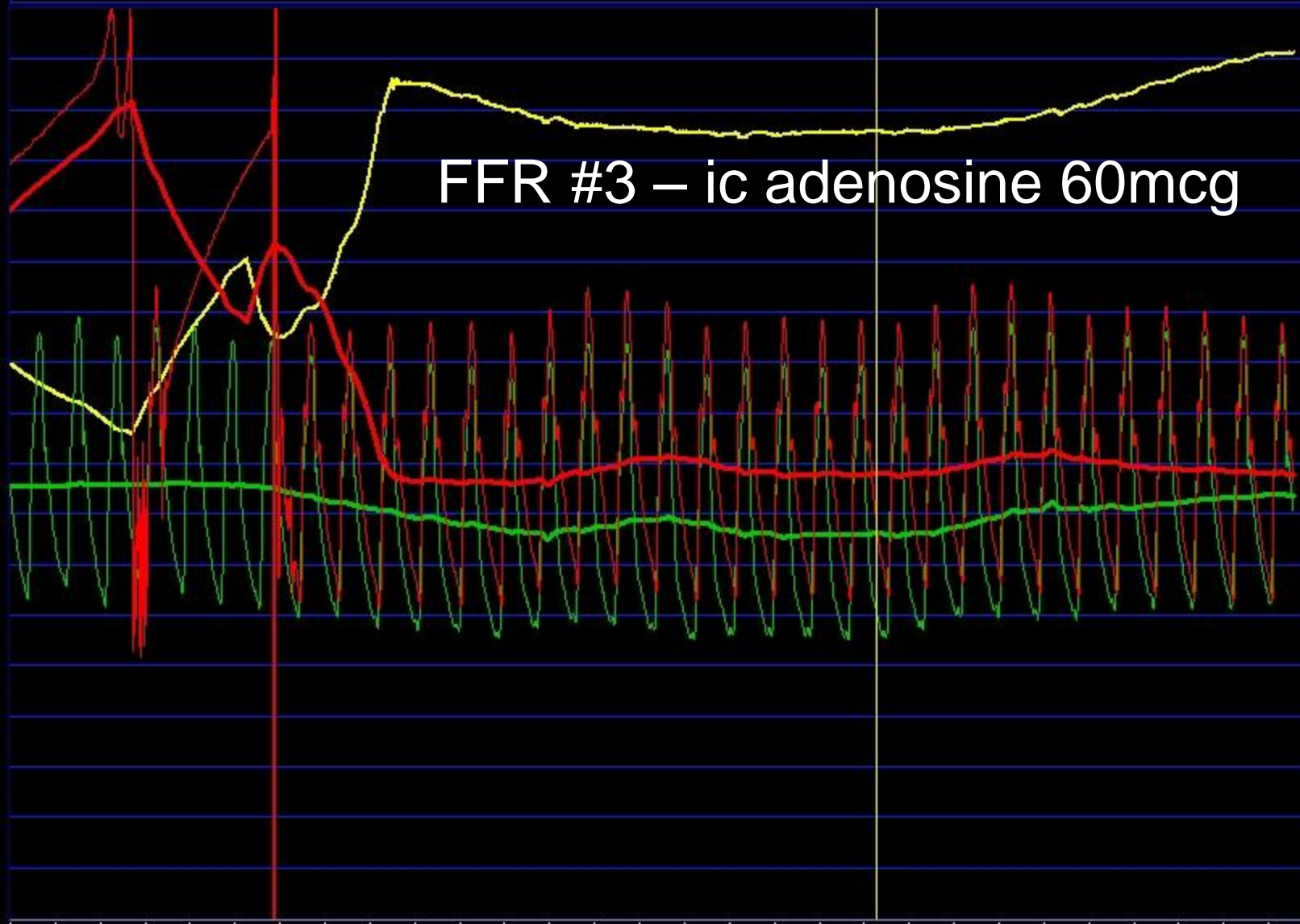
RENAME

DELETE

SETUP

CM - LAD 2013-04-15 17:05:43

FFR #3 – ic adenosine 60mcg



(88)  
Pa mean

(76)  
Pd mean

0.87  
FFR

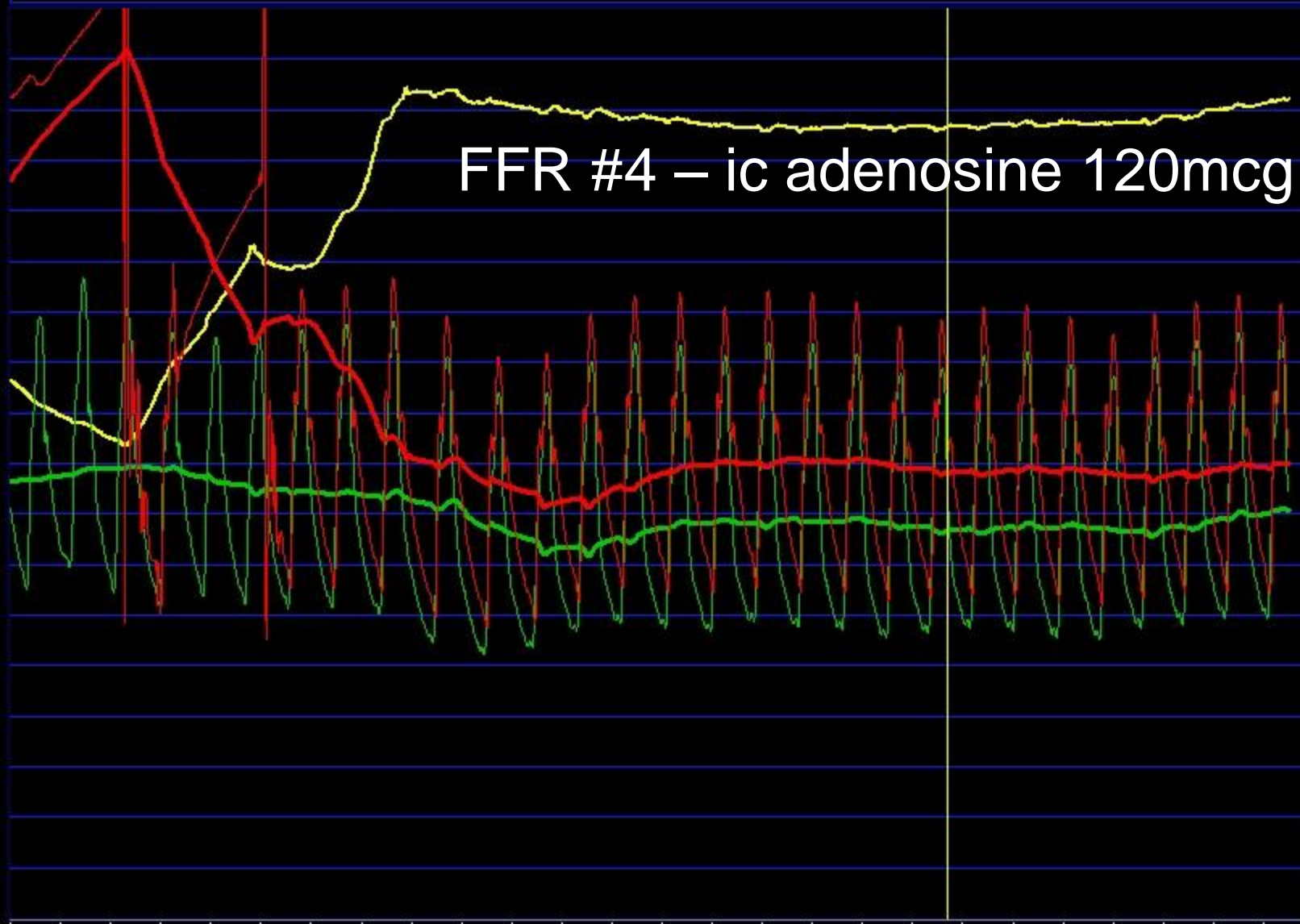
19.27  
CURSOR



FOLDER/PATIENT	PATIENT ID	DATE	TIME	VESSEL	PROCEDURE	ACTION	TYPE	SIZE
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COOPER	CM - LAD	2013-04-15	17:06:16				FFR	25Kb
COLIN KEMP 2905645636	CM - LAD	2013-04-15	17:05:43				FFR	29Kb
COLIN CHATTERTON 25017	CM - LAD	2013-04-15	17:03:35				FFR	69Kb
CN 1707596268	CM - LAD	2013-04-15	17:02:01				FFR	11Kb
CM - LAD	CM - LAD	2013-04-15	16:59:58				FFR	69Kb

UPDATE
EDIT
PRINT
PLAY ▶
EXPORT
RENAME
DELETE
SETUP

CM - LAD 2013-04-15 17:06:16



(88)

Pa mean

(77)

Pd mean

0.87

FFR

18.70

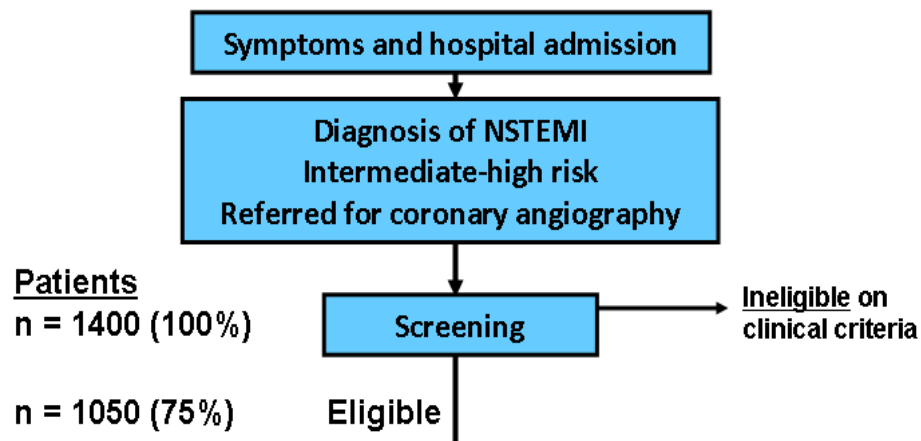
CURSOR



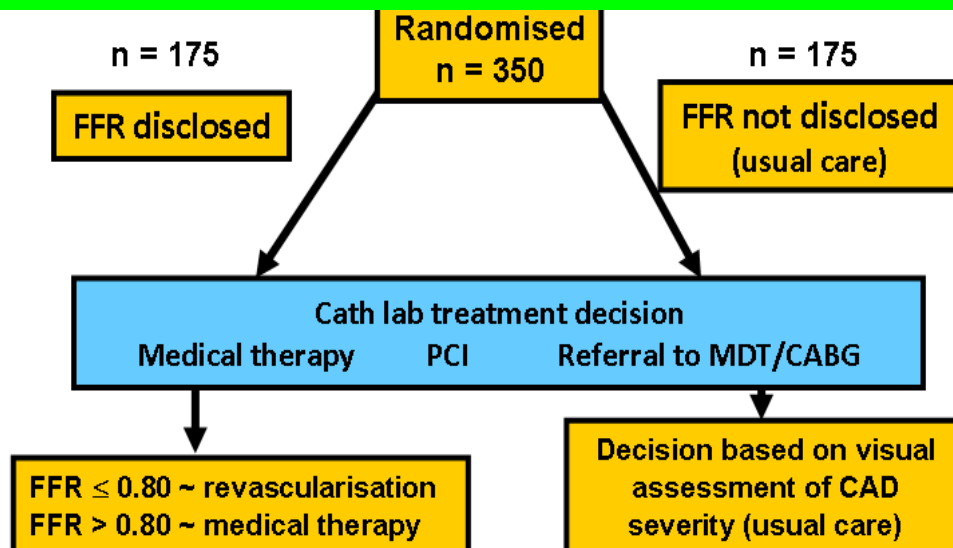
AUTOSCALE



# FAMOUS NSTEMI

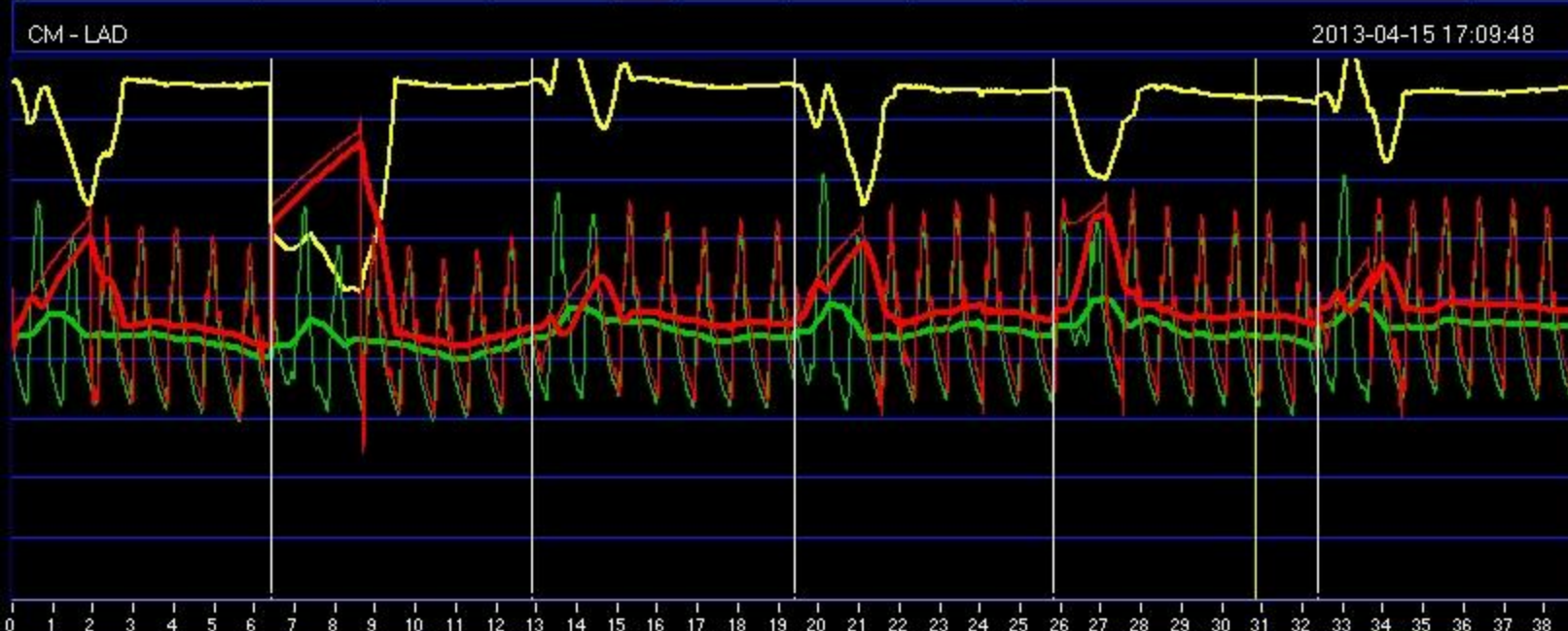


# RECRUITMENT COMPLETE

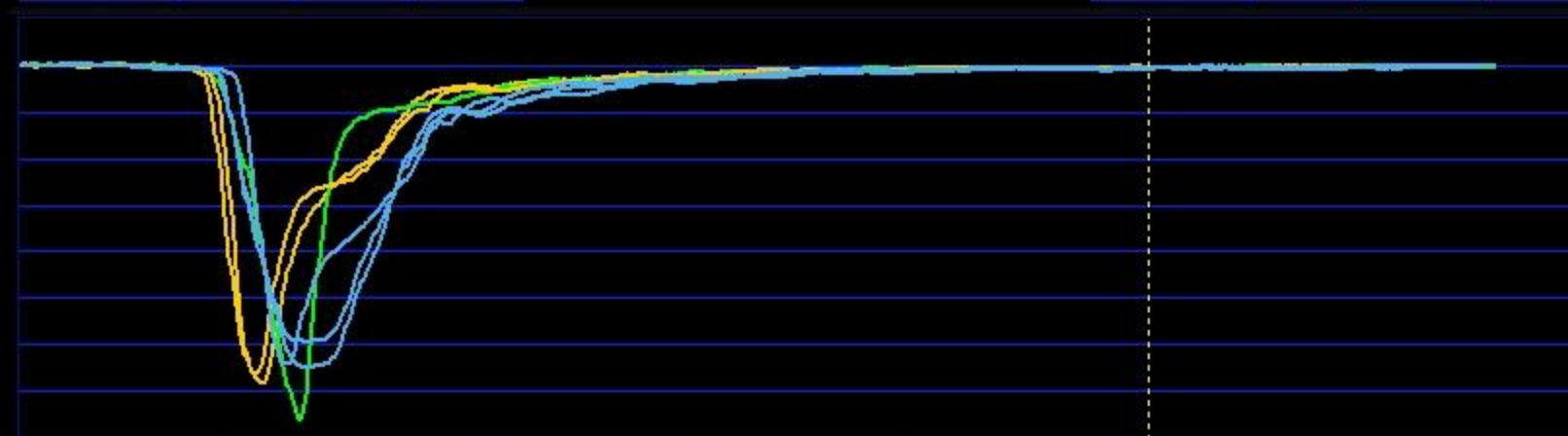


Thank You

FOLDER/PATIENT	PATIENT ID	DATE	TIME	VESSEL	PROCEDURE	ACTION	TYPE	SIZE
COUBROUGH	CM - LAD	2013-04-15	17:09:48				CFR	129Kb
COOPER	CM - LAD	2013-04-15	17:09:16				FFR	25Kb
COLIN KEMP 2905645636	CM - LAD	2013-04-15	17:05:43				FFR	29Kb
COLIN CHATTERTON 250172	CM - LAD	2013-04-15	17:03:35				FFR	69Kb
CN 1707596268	CM - LAD	2013-04-15	17:02:01				FFR	11Kb
CM - LAD	CM - LAD	2013-04-15	16:59:56				FFR	69Kb



Bas (0.44) 0.42 0.45 0.45 Hyp (0.29) 0.30 0.30 0.27



**(95)**  
Pa mean  
**(88)**  
Pd mean  
**0.93**  
FFR  
**1.5**  
CFR  
**25**  
IMR  
**-0.04**  
dT

**4.02**  
CURSOR  
  
**AUTOSCALE**