COMPARISON BETWEEN HS-C REACTIVE PROTEIN AND MICROALBUMINURIA LEVELS FOR THE PROGNOSIS OF RENOVASCULAR HYPERTENSION

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HISTORY OF RAA SYSTEM

1. **1898**: **Tigerstedt** **RENIN** discovery

kidney extract → rabbits → hypertension

HISTORY OF RAA SYSTEM

2. 1934 Goldblatt experimental renovascular hypertension

clampation of renal arteries (dogs) → hypertension

HISTORY OF RAA SYSTEM

3. 1939 Braun- Menendez **ANGIOTENSIN**

renin

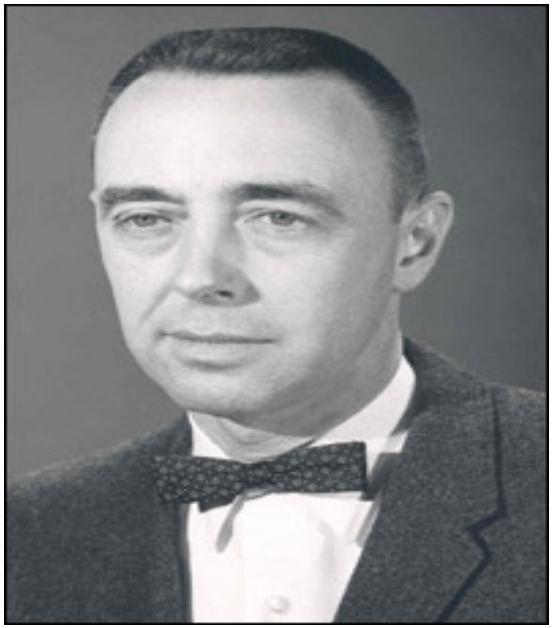
angiotensinogen → angiotensin

HISTORY OF RAA SYSTEM

4. 1993 Skeggs ANGIOTENSIN I , II

ACE

angiotensin I → angiotensin II



angiotensin II → hypertension

INTRODUCTION

1.Renovascular hypertension → **diagnosis trap**

2.**Life threatening complications** (after ACEI !)

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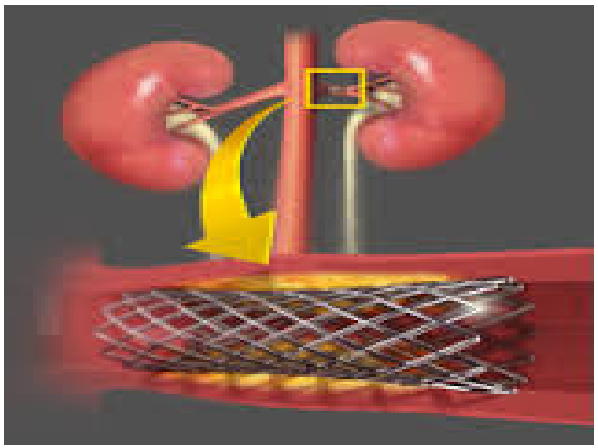
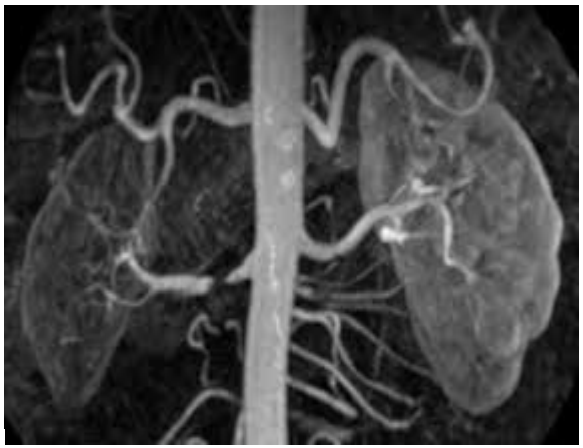
INTRODUCTION

3.Modern therapy ⇐ **DISCORDANCE** ⇒ Practical reality





PURPOSES

hsCRP / microAuria: prognosis markers + therapeutic implications

MATERIALS AND METHODS

76 patients ,43- 86 years , 67% males , renovascular hypertension, 24 months

1. **Clinical examination : quarterly**

- **exclusion criteria** : - actually smoker/ alcohol drinker
  - evolutive neoplasia
  - autoimmune disorders
  - diabetes mellitus
  - obesity
  - active infection

- **inclusion criteria:**

-difficult control of hypertension
-paradoxical hypertension after ACEI
-periumbilical bruits

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MATERIALS AND METHODS

2. EKG , quarterly: - standard 12 leads EKG - **LVH**

3. Ecocardiogram : -transthoracic, M mode, 2D mode

-color Doppler; continuous Doppler

LVH, LV mass, LV performance

MATERIALS AND METHODS

4. Renal artery sonogram

peak velocity , resistivity index

5. Abdominal computed tomography angiogram

if sonogram ≠ clear

6. Laboratory findings : quarterly

Creatinine clearance, hs-C Reactive Protein, microAuria

7.M -Indapamide 1.5 mg, Amlodipine 5-10mg, Nebivolol 5-10 mg

-Atorvastatin 10-40 mg, Rilmenidine 1-2 mg

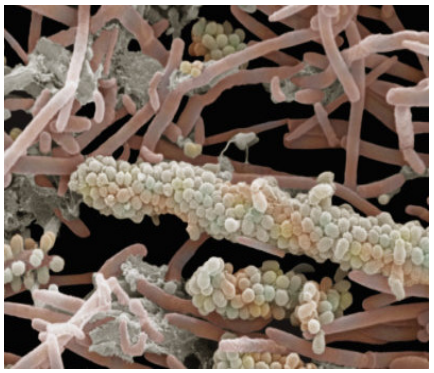
-Aspirin 100 mg/ Clopidogrel 75 mg/Acenocumarol 1-4 mg

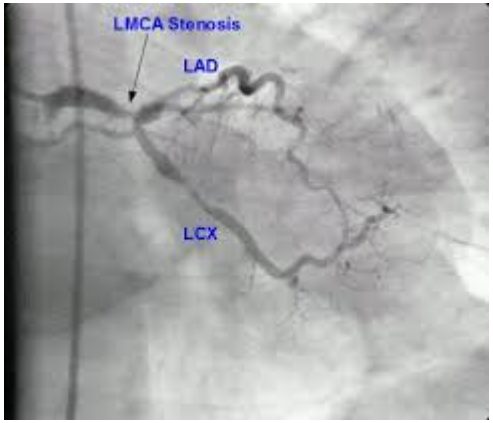
8. Interventional : percutaneous angioplasty + stenting(RI < 0.8)

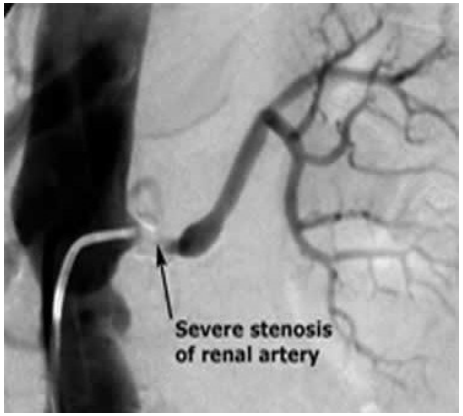
9.Dental treatment: scaling of dental plaque(biannual)

Dental plaque bacteria (Porphyromonis gingivalis)

1. **Interleukin 1** ⟹ atheromatous plaque formation
2. **Interleukin 6** ⟹ CRP ⟹ atheromatous plaque disruption
3. **Repeated bacteriemia** ⟹ atheromatous plaque inflamation

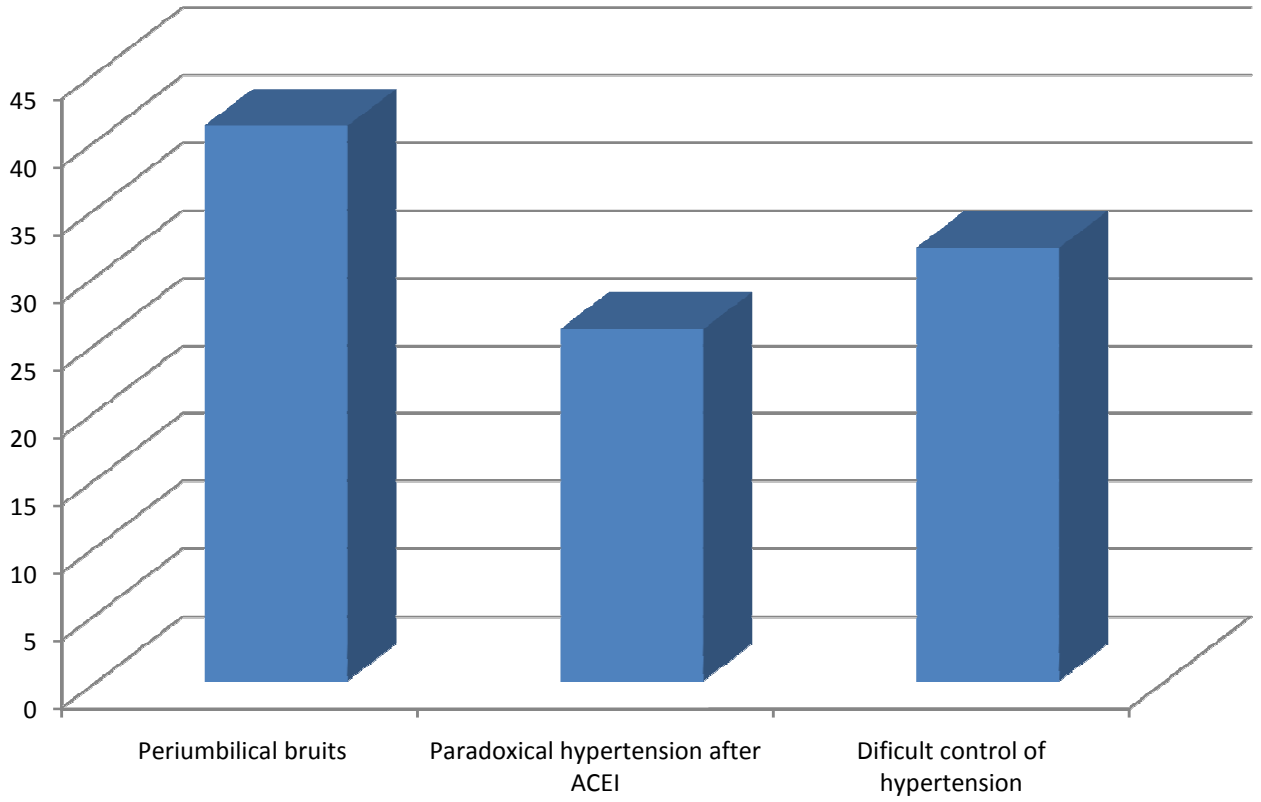






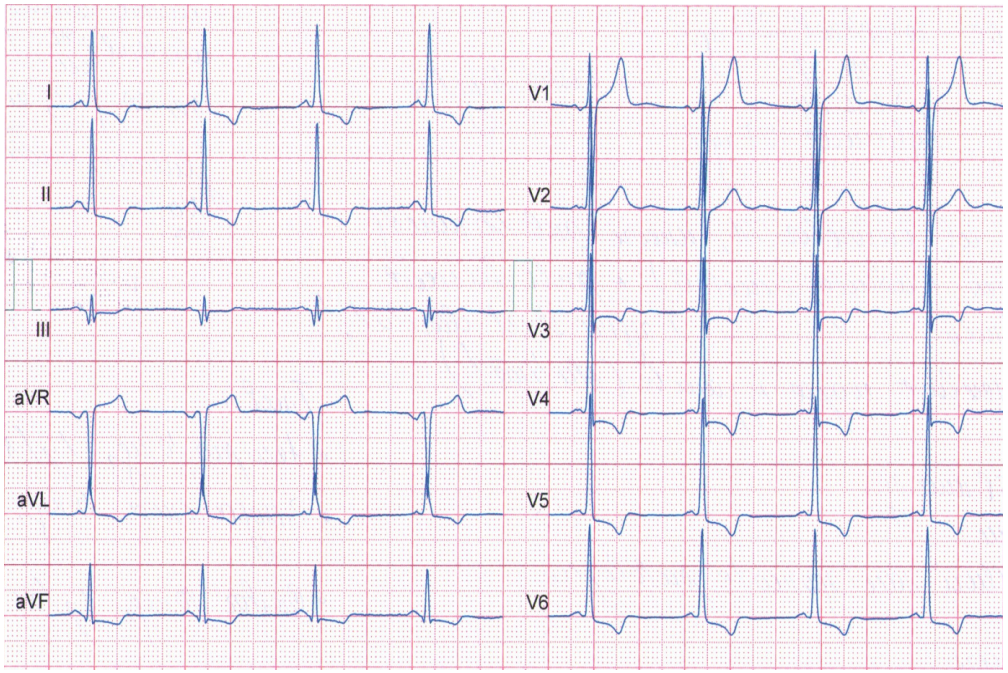
RESULTS

1. Clinical examination:



RESULTS

2. EKG- LVH : 68 patients (89%)



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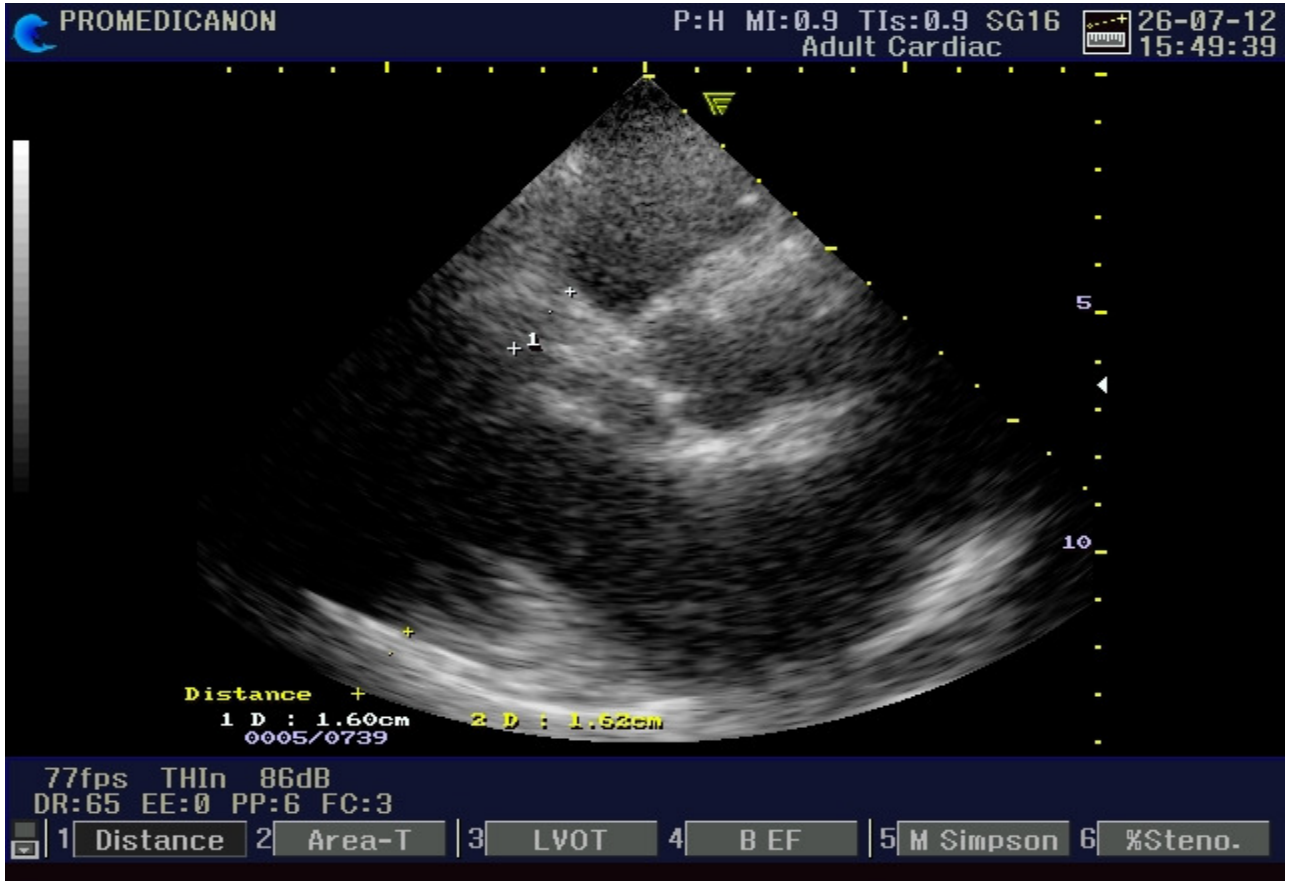
RESULTS

3.Echocardiography:

-**LVH** (wall thickness, mass)



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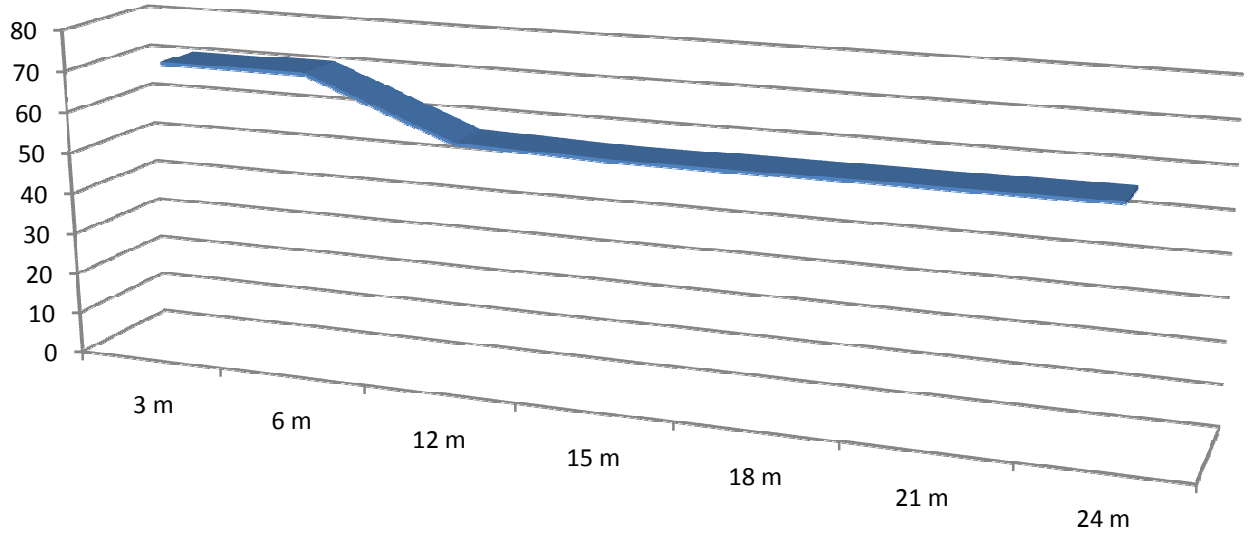
RESULTS

3. Echocardiography: - 19% diminished LVH (mass)

- 94%(1m) 75%(24m)

19%

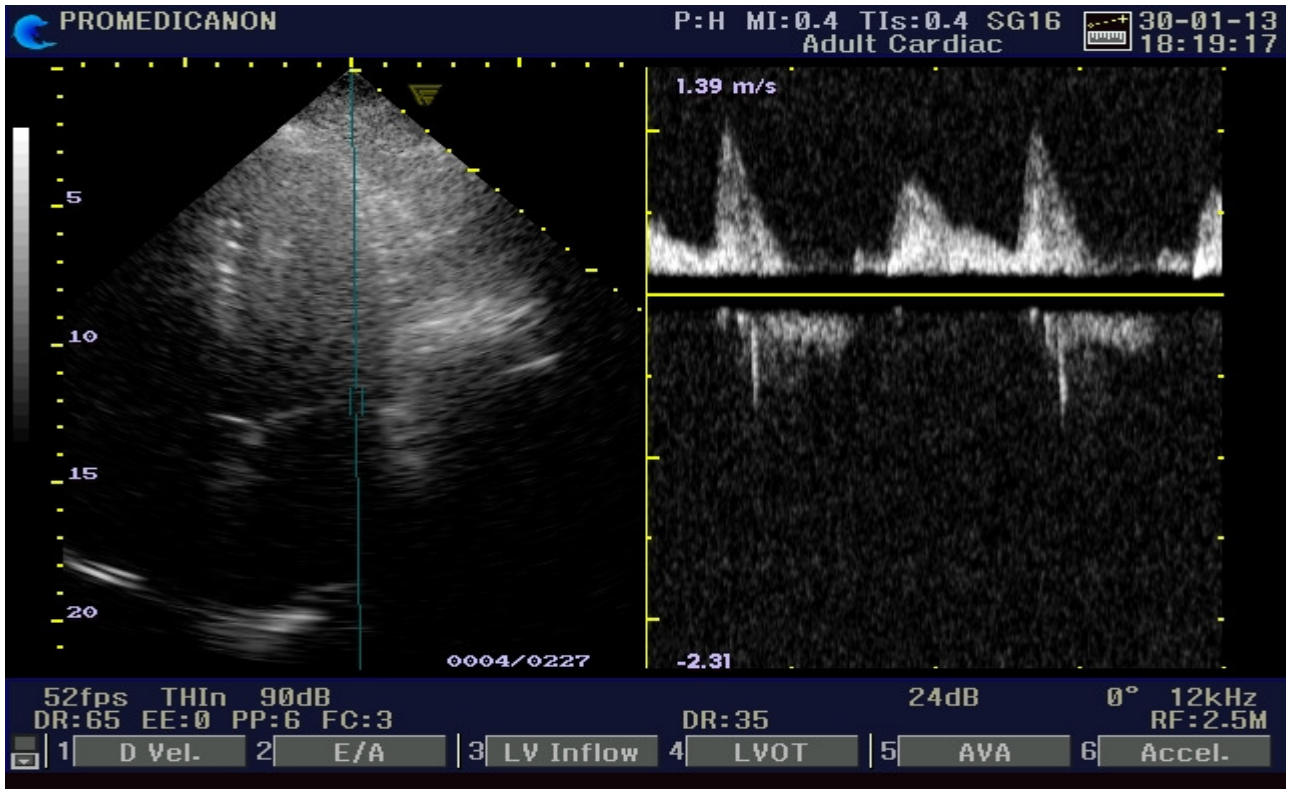


Evolution of LVH mass during 24 months observation

RESULTS

3.Echocardiography:

- **LV diastolic dysfunction**



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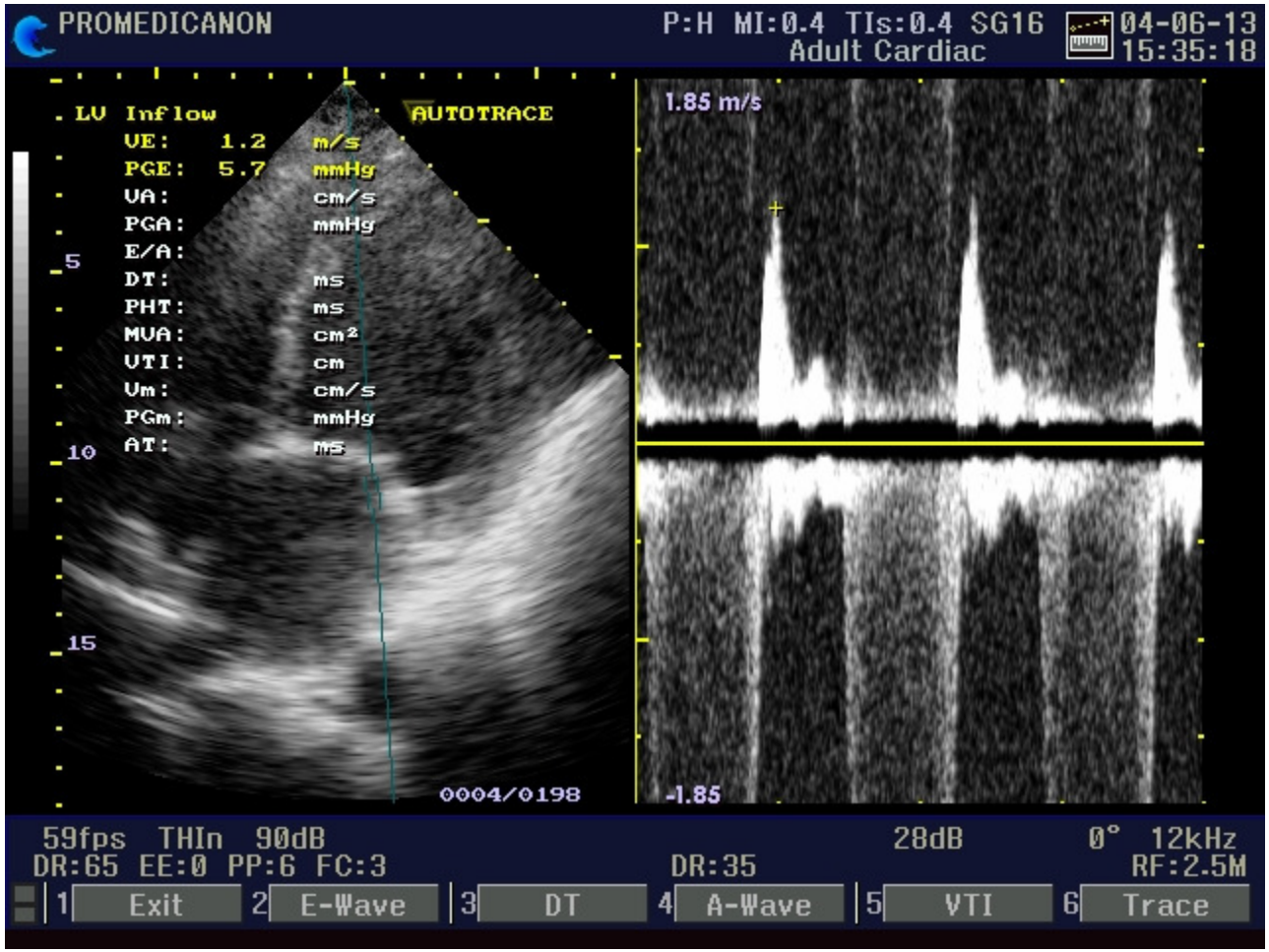

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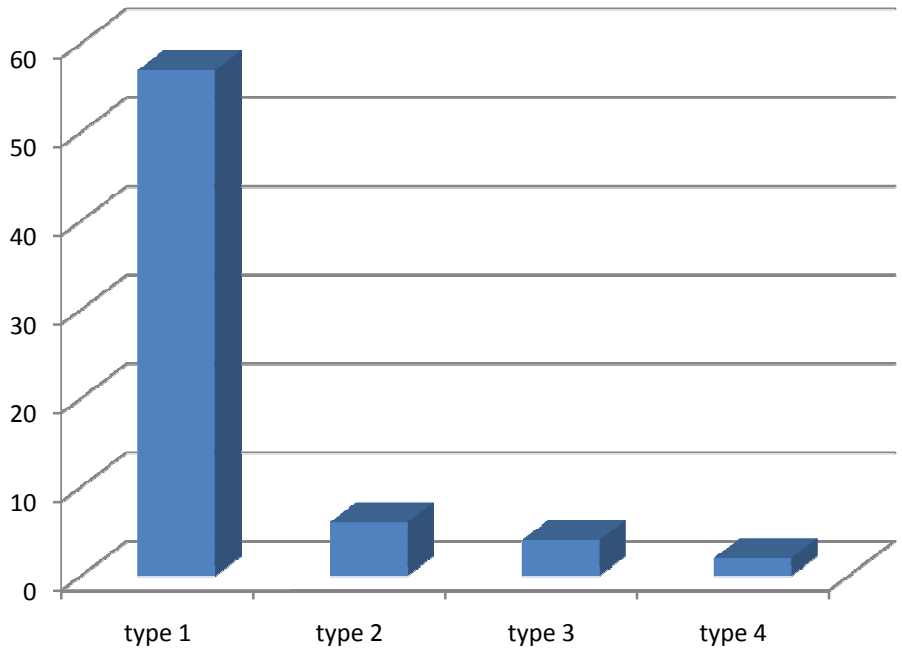


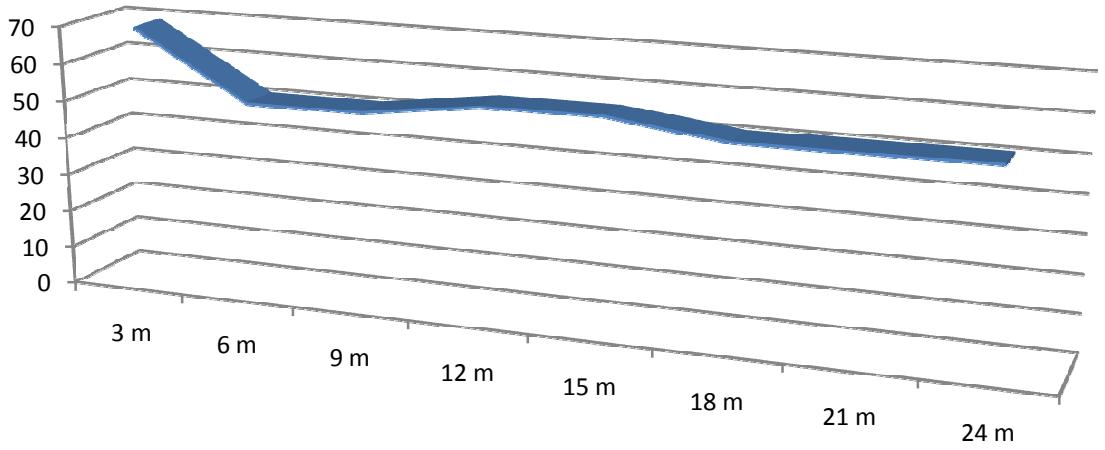
Types of diastolic dysfunction(LV)

RESULTS

3.Echocardiography: -34% improved LV diastolic function

-80% (1m) **54%(24m)**

34%

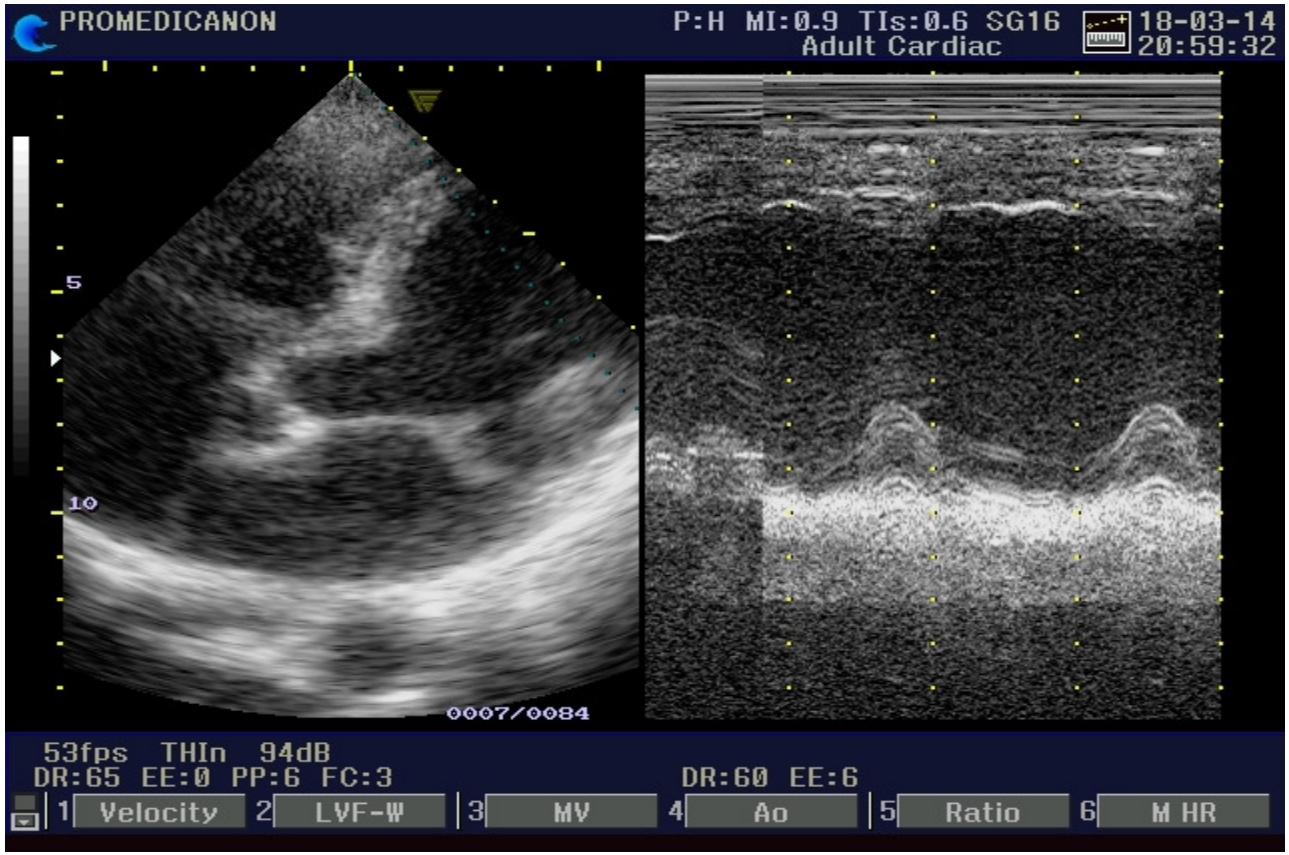


Evolution of LV diastolic dysfunction

RESULTS

3. Echocardiography:

- **LV systolic dysfunction** : segmentary kinetics



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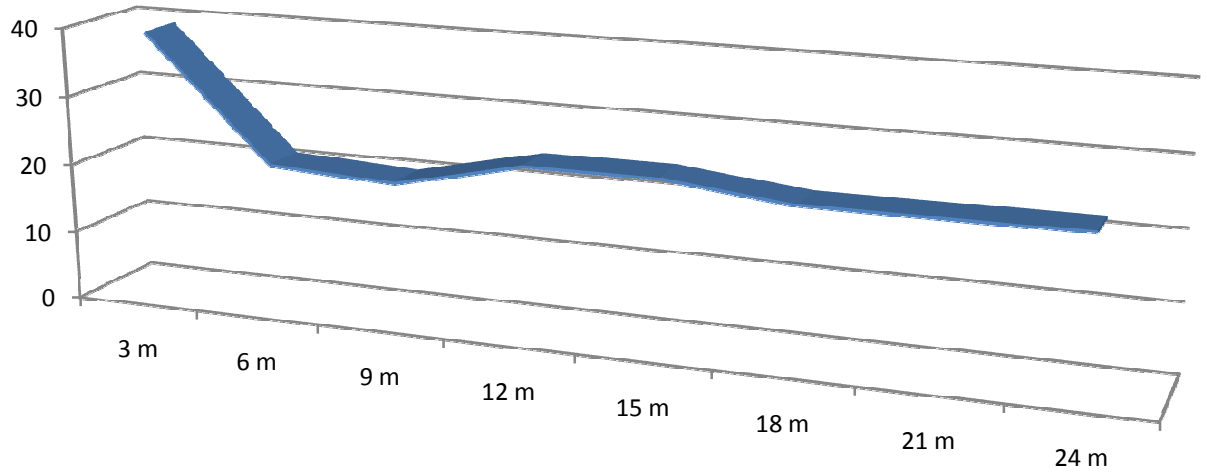
RESULTS

3. Echocardiography : -28% improved LV EF (EF>30%)

-51%(1m) low EF **23% (24m)**

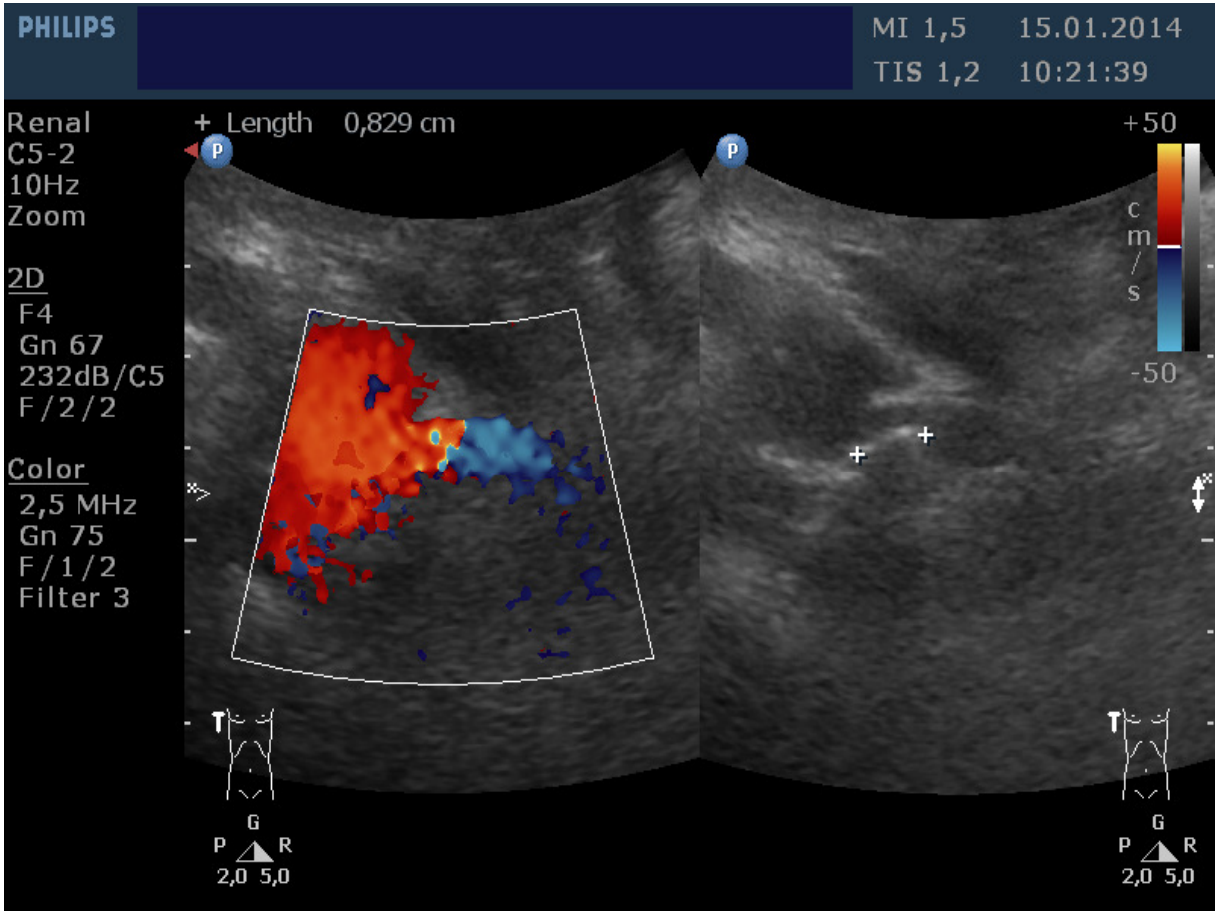
28%



Evolution of significant LV systolic dysfunction (EF< 30%)

RESULTS

4. Renal arteries sonogram:



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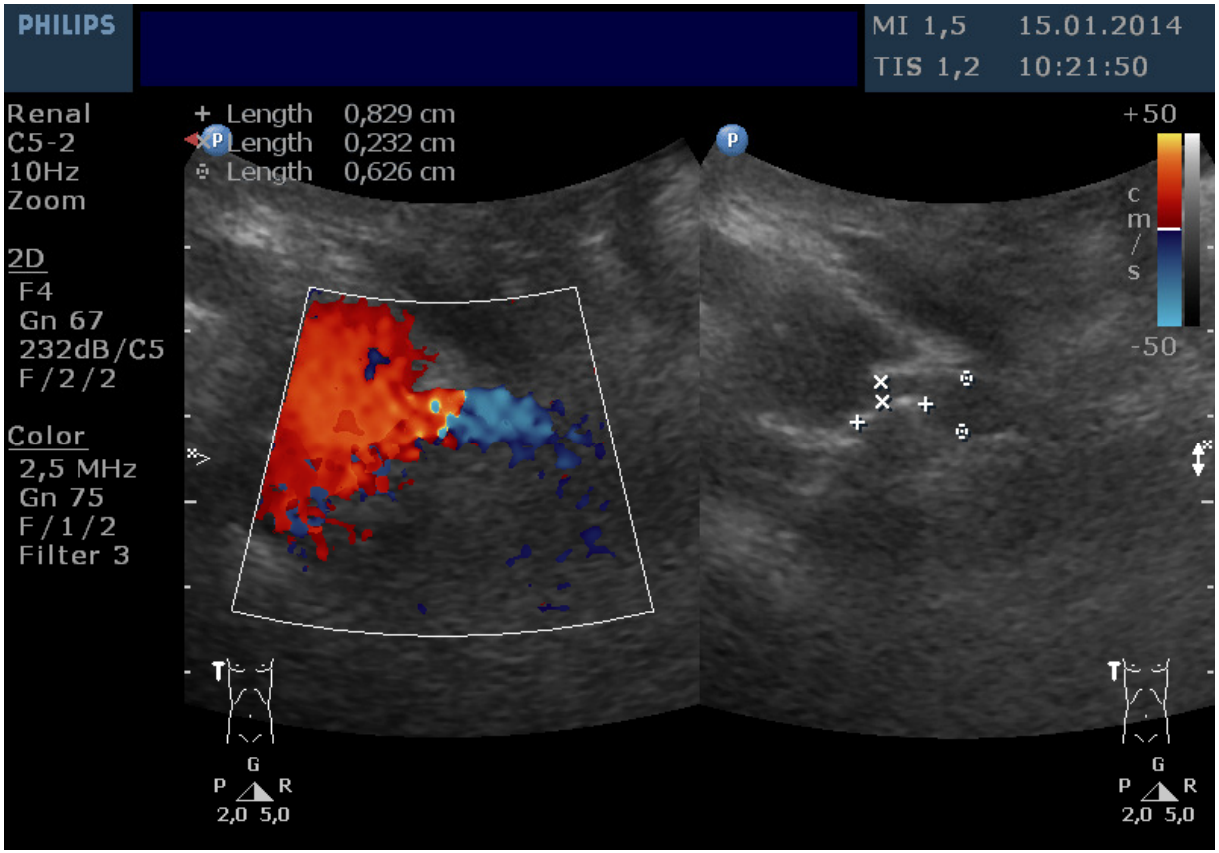
RESULTS

4. Renal arteries sonogram:



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RESULTS

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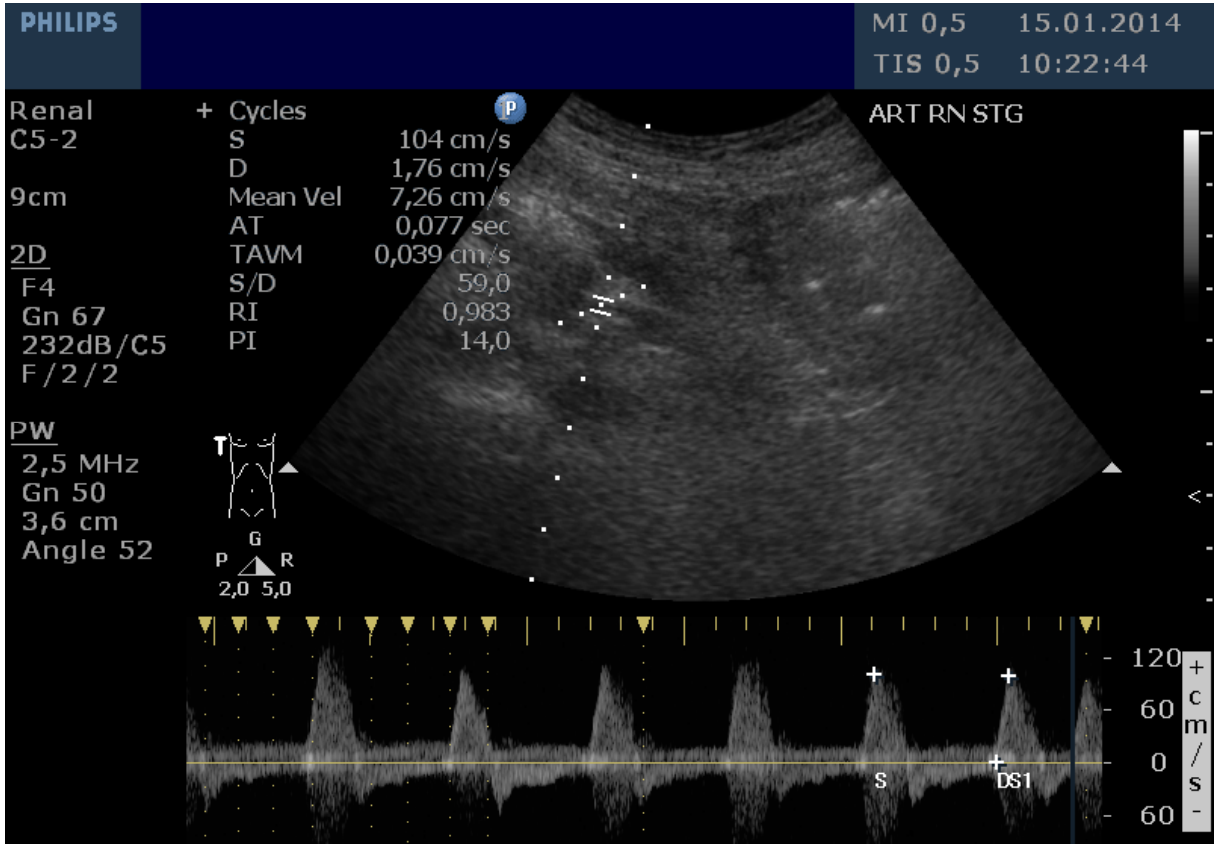

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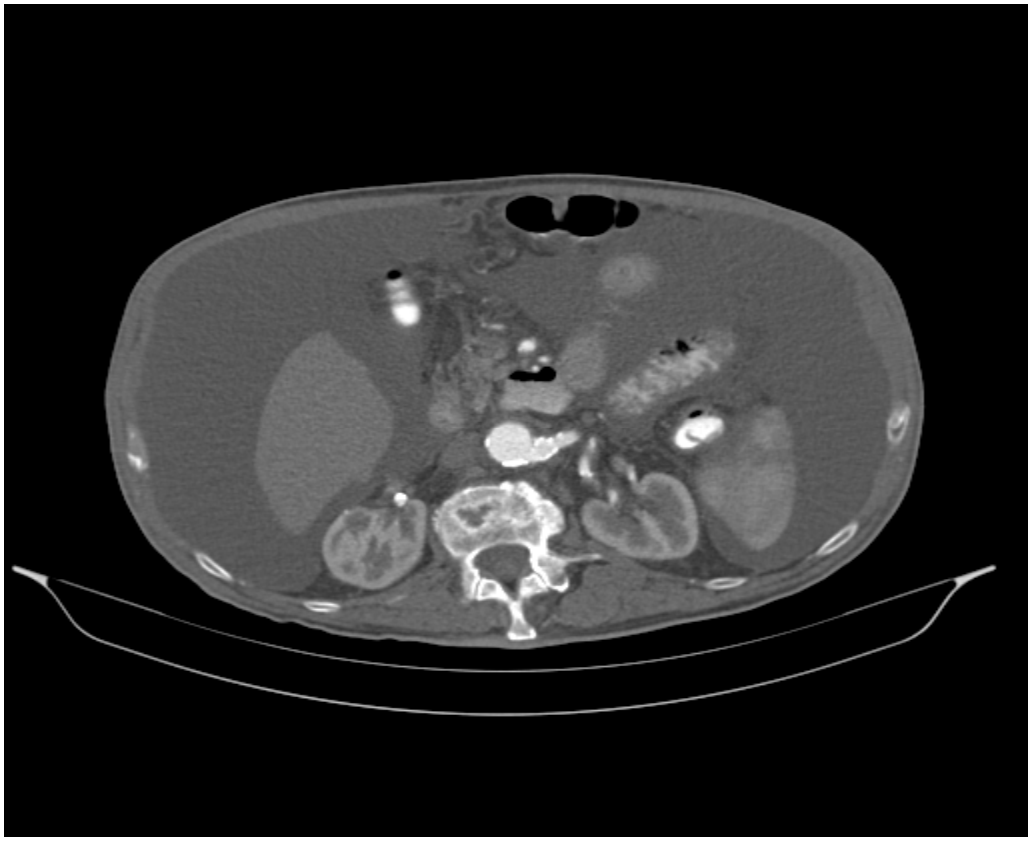
RESULTS

5.Abdominal computed tomography angiogram: 16 pts(21%)



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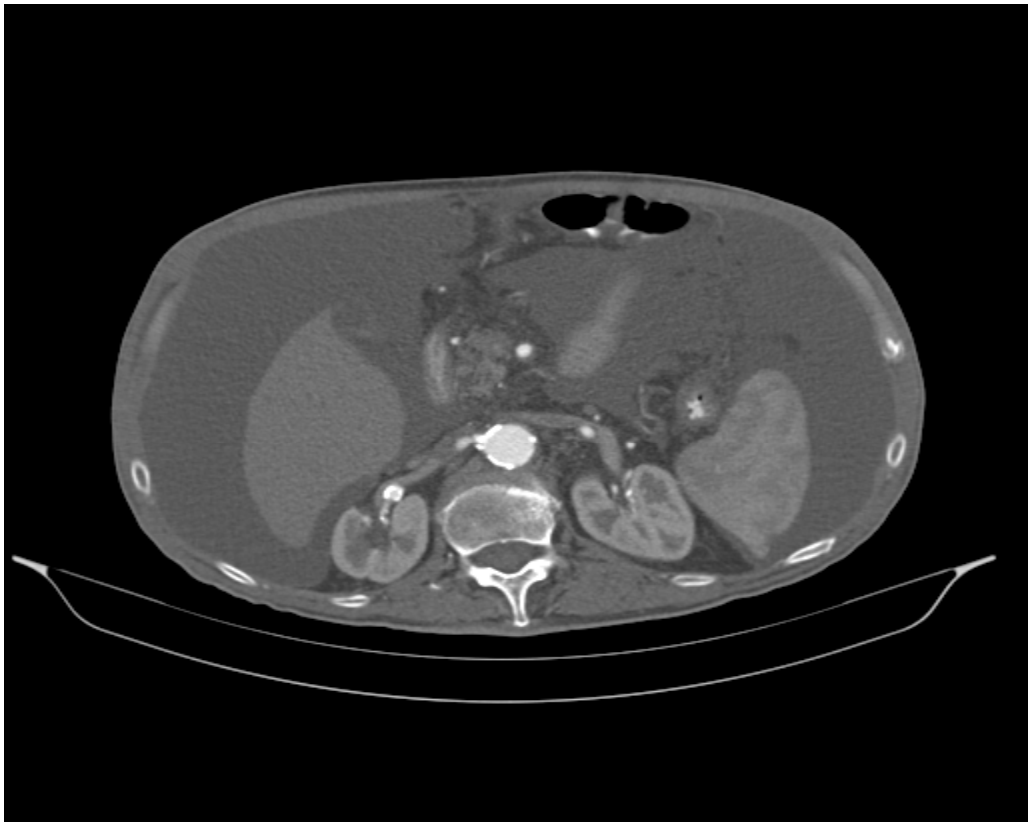
RESULTS

5.Abdominal computed tomography angiogram



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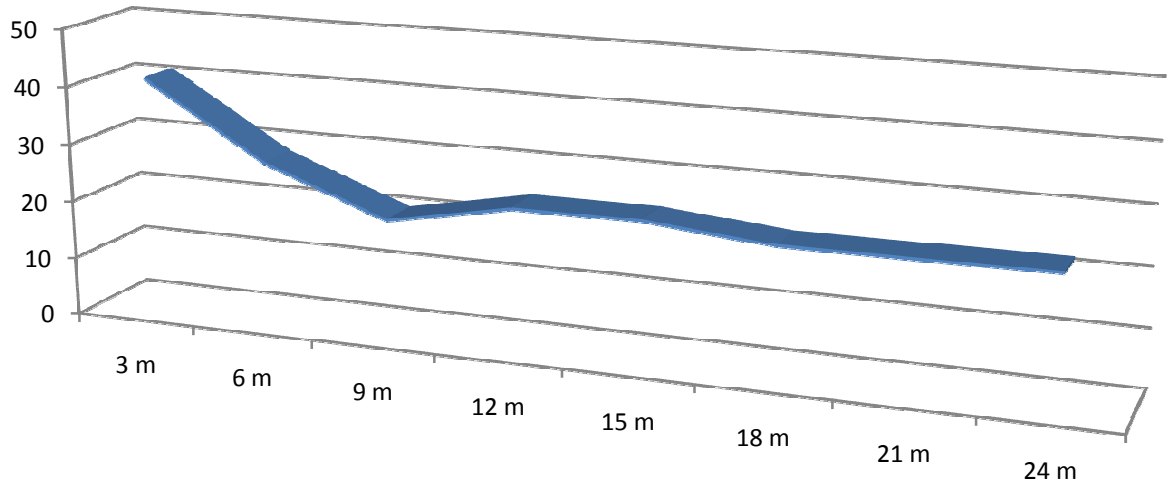
RESULTS

6. Laboratory findings:- 25% improved Creatinine clearance

- 53% (1m) low Cr clearance 28% (24m)

25%



Evolution of reduced Creatinine clearance

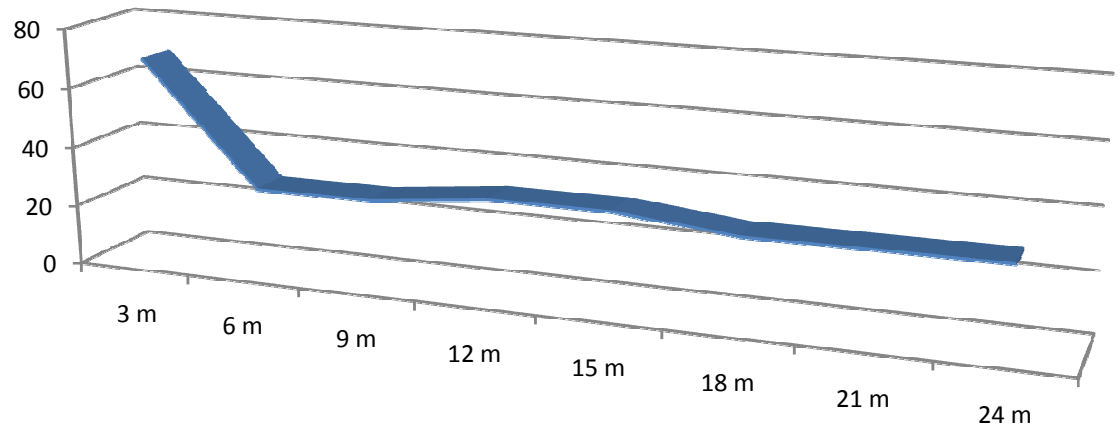
RESULTS

6. Laboratory findings:-48% diminished hs CRP (24m)

-high hsCRP 78%(1m) **30% (24 m)**

48%

-30% high hs CRP/ 28% low Creatinine clearance(p=0.006)



Evolution of pathological hs-CRP values

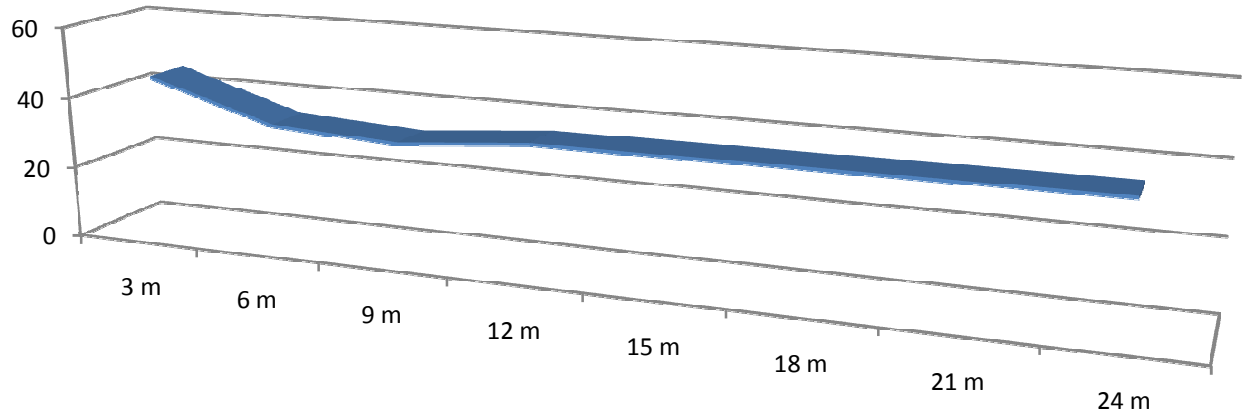
RESULTS

6.Laboratory findings :-12% diminished microA uria(24m)

-micro A uria 58%(1m) **46%(24 m)**

12%

-46% micro Auria / 28% low Creatinine clearance (p=0.004)



Evolution of pathological micro Auria

CONCLUSIONS

1. After 24 m:

-improved LV EF	**28%**
-improved LV diastolic function	**34%**
-diminished LVH (mass)	**19%**
-improved Creatinine clearance	**25%**
-diminished hs CRP	**48%**
-diminished microA uria	**12%**

2. **hs CRP = a better prognosis marker then microAuria**

30% high hs CRP / 46% microAuria / 28% low Creatinine clearance

3. **Originality : dental treatment**  **renovascular hypertension prognosis**

4. Future direction: **analysis of the renal artery atheromatous plaque(biopsy)**

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