

Isolated Cardiac Troponin Rise Does Not Modify the Prognosis in Elderly Patients with Hip Fracture

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CONFLICT OF INTEREST DISCLOSURE

I have no potential conflict of interest to report

INTRODUCTION

Hip fracture:

- frequent geriatric condition (1.6 million patients/year worldwide)
- poor prognosis (20-30% one year mortality) notably due to cardio-vascular complications

Acute myocardial infarction:

Universal definition: troponin elevation in association with electrocardiographic changes, and/or clinical symptoms of ischemia, and/or new wall motion anomalies

- frequent post-operative complication notably in non cardiac surgery.
- Associate with poor prognosis.
- Frequently asymptomatic notably in the elderly population

Le Manach et al. Anesthesiology 2005
Thygesen et al. J. Am Coll Cardiol 2012
Brauer et al. JAMA 2009

INTRODUCTION

The prognostic significance of a cardiac troponin rise remains controversial in elderly patients with hip fracture.

Some studies reported an increase in short and long-term mortality while other did not.

Moreover, these studies did not distinguish Isolated troponin rise and myocardial infarction according to the universal definition

Chong et al., Age ageing 2009

Fisher et al. Arch Orthop Trauma Surg 2008

INTRODUCTION

The aim of our study was to assess the prognostic value of Isolated Troponin Rise (ITR) in elderly patients with hip fracture.

METHODS

June 2009-June 2013 in Pitié-Salpêtrière hospital (Paris)

Inclusion criteria:

- ≥ 70 years of age
- hip fracture
- post-operative cardiac troponin measurement

Exclusion criteria:

- multiple or metastatic fractures
- redo surgery
- no troponin measurement

METHODS

All data were prospectively collected (age, sex, CIRS, comorbidity, ADL, IADL etc...)

Electrocardiogram (ECG) and cardiac troponin I (cTnI) measurement were routinely performed within the first 3 days after surgery in all patients.

Patients were regrouped according to troponin level and ECG interpretation

- Control group (no significant ECG change and no troponin rise),
- ITR Group (troponin rise without significant ECG changes)
- ACS group (troponin rise with significant ECG changes).

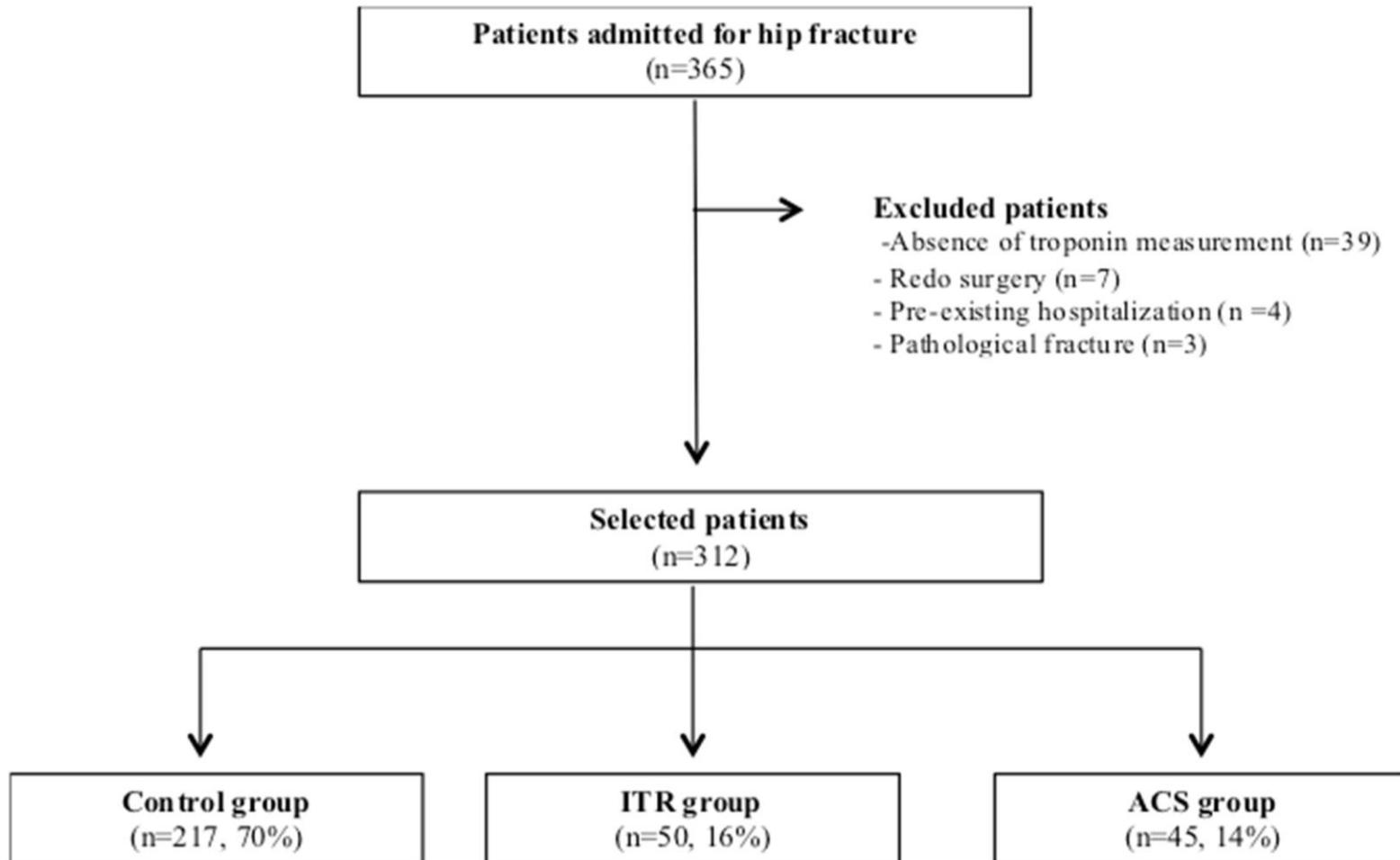
METHODS

The primary end point: 6 month mortality and/or re-hospitalization

Secondary end points:

- acute care and/or rehabilitation mortality
- Post-operative complications
- 30-day readmission
- 6 month functional outcome (ability to walk, ADL and IADL)
- new institutionalization.

RESULTS

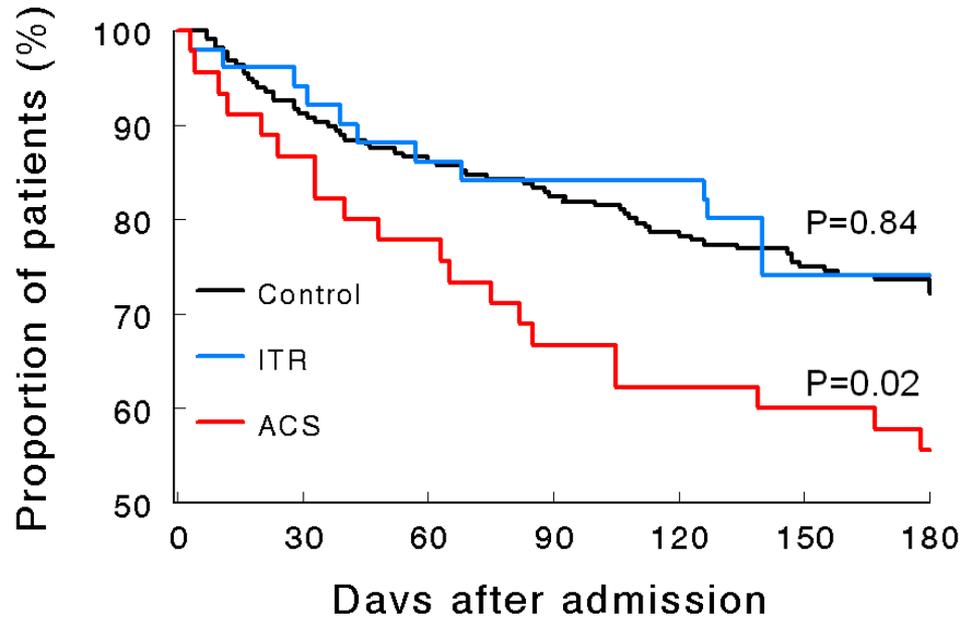


RESULTS

	Control (n=217)	Isolated troponin rise (n=50)	Acute coronary syndrome (n=45)	P values
Age (years)	86±7	87±6	84±9	.09
Men	58 (27)	11 (22)	14 (32)	.60
Medical history				
Atrial fibrillation	50 (23)	12 (24)	14 (31)	.52
Coronary artery disease	35 (16)	12 (24)	15 (33)*	.02
Cardiac failure	31 (14)	12 (24)	14 (31)*	.01
Estimated creatinine clearance < 30 mL/min	21 (10)	15 (30)*	10 (22)*	<.001
CIRS 52	8 [6-11]	8 [7-12]	10 [7-13]	.07
Autonomy				
ADL	5 [3-6]	5 [2-6]	5 [4-6]	.09
Walking ability				
No walking disability	125 (58)	26 (52)	15 (33)*	.01

RESULTS: primary end point

Death and/or rehospitalization



RESULTS: secondary end points

	Control (n=217)	Isolated troponin rise (n=50)	Acute coronary syndrome (n=45)	P values
Acute care complications				
Atrial fibrillation	14 (6)	5 (10)	10 (22)*	.004
Acute cardiac failure	28 (13)	7 (14)	15 (33)*	.002
Stroke	0 (0)	1 (2)	3 (7)*	.001
Infection	42 (19)	16 (32)	16 (36)	.02
Admission into ICU	5 (2)	3 (6)	7 (16)*	<.001
Death during acute care and/or rehabilitation	17 (8)	6 (12)	10 (22)*	.02
Return to home	180 (83)	36 (72)	25 (27)*	<.001
Readmission within 30 days	11 (5)	0 (0)	7 (17)†	.002
At 6 months				
No walking disability	55 (31)	13 (31)	9 (27)*	.03
ADL	5 [2-6]	3 [2-5]	3 [1-5]*	.03

CONCLUSION

Isolated cardiac troponin rise does not modify the prognosis in elderly patients with hip fracture

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Isolated troponin rise

- was not predictive of 6-month death and/or re-hospitalization
- did not significantly influence any other outcomes
 - postoperative complications,
 - admission to ICU
 - new institutionalization
 - walking ability and functional status.

cTnI rise within the context of ACS

- was associated with a significant increase of 6 months death and/or rehospitalization
- and a poorer outcome considering
 - admission to ICU
 - new institutionalization
 - walking inability and functional status

RESULTS: secondary end points

Death

