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# Evaluation of the rate of acute coronary syndromes with ST segment (STEMI) patients initial handling by a prehospital medical team

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## Introduction :

Upon receiving a 112 call for chest pain, the assumption is that it is an acute coronary syndrome (ACS) and the immediate dispatch of an MICU constitutes the 1st phase of optimal STEMI handling.

## Objective :

To evaluate sending an medical intensive care units (MICU) as first intervention
in the handling of ACS.

## Methods :

Prospective data from a regional pre-hospital STEMI register involving 39 MICU and 8 departmental prehospital Emergency Medical Services. Included: patients with STEMI from 2008 to 2014 treated with primary intervention patient handling. Factors studied: age, gender, cardiovascular risk factors, pain characteristics, type of caller. Evaluation criteria: response rate of the MICU from the time of the initial call and factors associated with this early response.

| Factors studied | Headcount | adjusted odd ratio [CI 95%] | P-value |
|---|---|---|---|
| Age over 75 years (ref 50-75y) | 2225 (19.7%) | 0.81 [0.71-0.93] | 0.0095 |
| Female gender | 2451 (21.8%) | 0.80 [0.70-0.90] | 0.0003 |
| Type of caller ( ref patient/witness) | | | |
| Doctor's 112 call | 1449 (12.9%) | 3.27 [2.60-4.10] | <0.0001 |
| Paramedic's 112 call | 2089 (18.7%) | 0.54 [0.48-0.61] | |
| Unusual pain | 1359 (12%) | 0.74 [0.64-0.86] | <0.0001 |
| Antecedents of cardiovascular disease | 2175 (19.6%) | 1.26[1.11-1.45] | 0.0006 |
| Hypertension | 4304 (41.6%) | 1.10 [0.99-1.23] | 0.08 |
| Dyslipidemia | 3956 (35.7%) | 1.10 [0.98-1.22] | 0.1 |

**Figure 1 : multivariate analysis of factors associated with Primary response by the MICU**

## Results :

Out of 11 295 STEMI, the MICU response rate from the time of the initial call was 83%. In univariate analysis, heredity, smoking, diabetes and obesity were not significantly linked to MICU response. In multivariate analysis, a doctor's 112 call and a history of coronary heart disease were factors independent of instant MICU response, unlike an age over 75, female gender, a paramedic's 112 call and unusual pain.

*Primary response by the MICU on an assumed ASC was found in 83% of cases. Among these cases, women, people aged over 75 and cases with unusual pain seemed insufficiently taken into account, and were associated with a delayed MICU response.*